

Mission :

To Regulate and Support Arizona Agriculture in a manner that encourages farming, ranching and agribusiness, while protecting consumers and natural resources.



**ARIZONA
DEPARTMENT OF AGRICULTURE
ANNUAL REPORT**

FY2014 – 2015

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Agricultural Consultation & Training (ACT)

The Agricultural Consultation and Training Program is an innovative compliance assistance program unique to an agricultural regulatory agency. This program embraces the Arizona Department of Agriculture's (ADA) goal of encouraging farming, ranching and agribusiness, while protecting consumers and natural resources by utilizing a non-enforcement approach. ACT is not affiliated with any of ADA's enforcement programs, allowing staff members to provide a formal means by which the regulated agricultural community may request compliance assistance without regulatory intervention. Agricultural Consultation and Training serves Arizona's diverse agricultural community by promoting agriculture, conducting training and increasing voluntary compliance and awareness of regulatory requirements. ACT provides agricultural conservation education through the following compliance assistance and education programs:

- Pesticide Safety
- Air Quality

The Agricultural Consultation & Training Program also houses the following programs:

- On-Farm Energy Audit Implementation Program (Partial Year: July-August 2015)
- Good Agricultural Practices/Good Handling Practices Food Safety Program
- Livestock & Crop Conservation Grant Program
- Specialty Crop Block Grant Program
- Arizona Citrus Research Council
- Arizona Iceberg Lettuce Research Council
- Arizona Grain Research and Promotion Council
- Agricultural Employment Relations Board

Pesticide Safety Compliance Assistance

The Environmental Protection Agency's (EPA) Worker Protection Standard (WPS) is designed to reduce the risk of pesticide exposure to pesticide handlers and agricultural workers. The WPS includes requirements for pesticide safety training, notification of pesticide applications, use of personal protective equipment, restricted entry intervals following pesticide application, decontamination supplies and emergency medical assistance. The Agricultural Consultation and Training (ACT) Pesticide Safety staff person assists growers in complying with federal and State Worker Protection Standards by providing pesticide safety training for pesticide handlers and agricultural workers, developing pesticide information resources in English and Spanish, and performing mock inspections to assist farm and nursery owners in complying with pesticide regulations.

Pesticide Safety Training

Among the more popular services provided by ACT staff are free pesticide-safety training courses. Course attendees learn how to work safely around pesticides, or in areas where pesticides have been applied, and the steps to recognize, respond to, and prevent pesticide exposure.

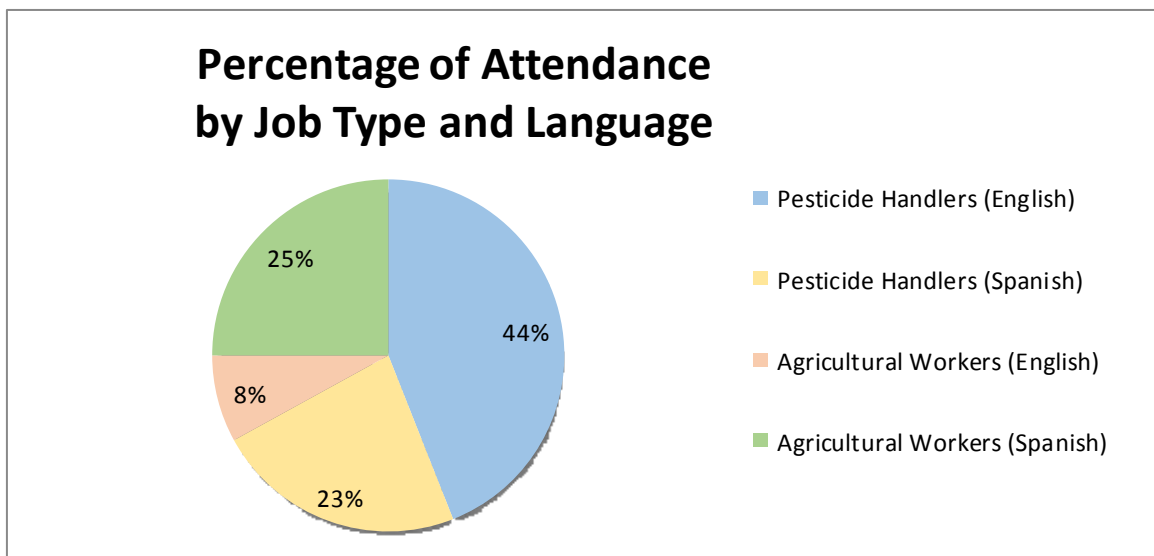
The training courses are provided in English and Spanish and are open to anyone who would like to attend. The courses are also promoted to safety trainers. Licensed and certified pesticide applicators may also attend to receive two hours of Continuing Education toward the renewal of their license.

During FY 2015, ACT staff presented pesticide safety training to 868 people representing 99 agricultural operations, landscaping companies, tribal communities, golf courses and governmental agencies.

The two-hour pesticide handler course was provided to 586 people who apply pesticides. Of the handlers, 25 licensed applicators participated to receive an EPA Pesticide Training Verification card and Continuing Education hours toward the renewal of their licenses.

In addition to the pesticide handlers, 282 people attended one-hour pesticide safety courses designed for agricultural workers. Agricultural workers perform tasks such as weeding, irrigating and harvesting crops in areas where pesticides had been applied in the previous 30 days. The following chart shows the percentage of attendance in each type of training.

As is displayed in the following chart, 67% of the people who attended a pesticide safety training course were trained as pesticide handlers and the remaining 33% were trained as agricultural workers.



During this reporting cycle, ACT Pesticide Safety Program staff also presented two, 4-hour classes on pesticide safety and equipment calibration to 46 landscape professionals. The classes were presented at the Arizona Landscape Contractors' Association office in Scottsdale.

Arizona Pesticide Safety Train-the-Trainer Workshops

Each year, staff in the Arizona Department of Agriculture's (ADA) Agricultural Consultation and Training Program works with industrial hygienists from ADA's Environmental Services Division to present pesticide safety train-the-trainer workshops.



The workshops, which are presented in English and Spanish, are designed to increase knowledge on human health and environmental

concerns when working with pesticides and steps to reduce exposure to agrichemicals.

Hands-on training techniques and group activities are used to demonstrate how to extend pesticide safety information to pesticide handlers and fieldworkers.

Train-the-Trainer workshop attendees respond quickly to a simulated pesticide spill.

In fiscal year 2015 the team of instructors presented 13 workshops to 187 people in Yuma, Phoenix, Maricopa, Chino Valley, Flagstaff and Mohave Valley. In addition to attending the workshop, attendees were required to provide a 5-minute safety presentation and pass a 50-question trainer exam before becoming a certified trainer. This year, 171 people completed and passed all three elements of the trainer requirements. They each received Arizona Pesticide Safety Trainer Certificates, which are valid for

three years.

Pesticide Applicator Licensing Exam Events

ACT staff administers private and commercial applicator licensing exams during trade shows, conferences and to large groups working in remote areas.

During FY15, ACT staff was invited to provide pesticide applicator exam events for 100 people in six locations. The events were held in Gallup, New Mexico (Navajo Nation), Cottonwood, Willcox, Casa Grande, Glendale and Phoenix.

The test takers who participated in the events in Gallup and Cottonwood were State, Federal and Tribal governmental agency employees involved in community pest control programs. Most of the people who attended the remaining four locations planned to use pesticides on golf courses, privately-owned farms, ranches and nurseries.

Fifty-six people passed the National Pesticide Applicator's Core Exam. They received Private Applicator's Certifications, which will allow them to purchase, use and supervise the use of restricted-use pesticides on their own private property. Nineteen governmental agency employees earned Commercial Applicator's Certifications after passing both the National Core Exam and a use-specific category exams. The category exams include Forestry Pests, Aquatic Pests, Agricultural Plant and Fumigants for Burrowing Rodents and Grain Pests.

Pesticide Safety Teaching Tools, Informational Resources, and Training Modules

ACT staff develops new and adapts existing teaching tools, informational resources and training modules. These materials are used during safety events and are distributed to agricultural employers, employees, health care professionals and outreach educators.

In fall 2015, staff revised the "Pesticide Safety Sheets", a Worker Protection Standard compliance packet ACT created in 2011. The 2015 Pesticide Safety Sheets provide information on the following:

- Central location emergency medical information requirements
- Sample pesticide application log
- Decontamination site items for agricultural workers
- Decontamination site items for pesticide handlers
- Pesticide safety training topics for agricultural workers
- Pesticide safety training topics for pesticide handlers

- Bilingual list of personal protective equipment terminology found on pesticide labels
- Bilingual list of environmental protection terminology found on pesticide labels
- Bilingual list of first aid terminology found on pesticide labels
- Instructions for triple-rinsing pesticide containers
- Application buffer zones requirements
- Important Steps in Cleaning Pesticide Spills
- Useful conversion factors for pesticide equipment calibration

The “Pesticide Safety Sheets” are presented on laminated cardstock pages, making this resource water-proof, durable and versatile. Growers can hang the entire packet on a nail in a farm shop or they can separate the pages for use in different areas such as an employee breakroom, pesticide mixing site or equipment storage area. Furthermore, the two-sided, bilingual format of the “Pesticide Safety Sheets” allow English- and Spanish-language readers to use the same resource simply by flipping over the packet or page.

Air Quality Compliance Assistance

Regulated Agricultural Best Management Practices



The Regulated Agricultural Best Management Practices (RABMP) program has completed its twelfth year of providing air quality compliance assistance to Arizona’s agricultural community through a cooperative agreement with the Arizona Department of Environmental Quality (ADEQ). The RABMP program provides a means by which Arizona’s agricultural community can request compliance assistance without incurring regulatory intervention for applicable Federal, State and local regulation.

The RABMP program goal is to provide the regulated agricultural community in Maricopa, Yuma and Pinal Counties with the necessary resources to achieve compliance with applicable air quality standards. The program is projected to grow due to an increase in outreach for growers in the new West Pinal County Nonattainment Area.

The ACT Air Quality staff person regularly participates in local air quality stakeholder’s meetings such as:

- EPA Region IX Best Achievable Control Measures (BACM)
- ADEQ’s Regional Haze and Natural Events meetings
- Maricopa County rule 310 and 310.01 public process
- Maricopa County Association of Governments (MAG) Air Quality Technical Committee
- Meetings for the EPA 5% reduction of particulate matter (PM10) plan
- Pinal County PM10 reduction stakeholder group
- Yuma County stakeholder groups for the Ag BMP program
- Governor’s Agricultural Best Management Practices Committee Technical Work Group
- State and County Farm Bureau

The federal Clean Air Act requires that air pollutant emissions be controlled from all significant sources in areas that do not meet the National Ambient Air Quality Standards. Air quality regulation for agricultural dust requires farmers, growers, and producers in animal agriculture in designated areas of Arizona to implement agricultural Best Management Practices (BMPs) to help reduce air pollution, especially

particulate matter (PM10). Agricultural BMPs are feasible and effective practices that have been evaluated for their efficiency, applicability, likelihood for implementation and have been adopted into State regulation.

Examples of BMPs include:

- Track-out control system – to remove mud from farm equipment tires before they enter a paved public road.
- Planting and tillage - timing activities to coincide with precipitation or the application of water.
- Wind barriers – fences, structures or vegetative barriers perpendicular to the prevailing wind direction.
- Misting systems in animal holding pens.
- Speed limits on unpaved farm roads (20 mph or less).
- Engine speed governors on feed trucks (15 mph or less).
- Reducing tillage operations by implementing conservation tillage.



Outreach and education is provided to Arizona's agricultural community about air quality in an effort to reduce regional dust pollution through:

- **On-site visits to farms and nurseries** for site specific assessments and recommendations. For fiscal year 2015 there were 127 visits made to producers to promote the program.
- **Agricultural BMP training for farm workers in English and Spanish.** In fiscal year 2015 there were 18 trainings, presentations, and promotions of the program to agricultural workers and representatives. Outreach and training reached 2,446 participants.
- **High wind advisory email alerts.** During fiscal year 2015, ten forecasts were sent to 291 producers in Maricopa, Yuma and Pinal Counties.
- **"Air Quality & Agriculture – Air Quality in Action", a quarterly newsletter.** In fiscal year 2015, 1,109 copies of the newsletter were sent to 278 stakeholders in Maricopa, Yuma and Pinal Counties.
- **Articles and ads in industry periodicals.** In fiscal year 2015, 11 articles and ads were published with a readership of 17,909 people.
- **Cooperation with other agencies** such as the Arizona Department of Environmental Quality (ADEQ) and county farm bureaus to address compliance issues needing correction. These include public complaints and violations. During fiscal year 2015, five complaints were addressed.



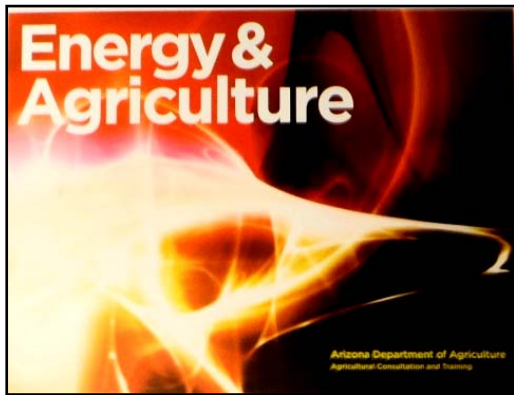
Due to the Environmental Protection Agency (EPA) concurrence with the ADEQ's natural windblown dust event demonstrations, Maricopa County has been declared in compliance with the Clean Air Act for PM10. In the process of creating a maintenance plan, in 2015 the BMP definitions were re-written to meet EPA's "specific" and "enforceable" recommendations. Because of these changes, the RABMP Coordinator has been updating the outreach materials. New guides will be distributed in the fall of 2015.

The Technical Workgroup to the Governor's Agricultural Best Management Practices Committee met throughout the year to finish work on the new Ag BMP Program for Pinal County. The new Pinal County program received final approval from the Governor's Agricultural Best Management Practices Committee and is set to take effect on January 1, 2016. The new program consists of BMPs in five different categories as well as BMPs to address windblown dust. Pinal County producers will also be asked to submit a survey every three years

detailing the BMPs implemented. This will help ADEQ to assess the effectiveness of the program. Outreach training sessions for Pinal County will begin in the fall of 2015.

In 2005 the Yuma Ag BMP program was implemented to address the PM10 problem in Yuma County, but no outreach materials were available. Outreach to the community began in fiscal year 2010 to promote agriculture's proactive approach to addressing the PM10 problem in Yuma County. In fiscal year 2015 ACT staff continued outreach by meeting producers, attending industry functions and reestablishing stakeholder meetings.

On-Farm Energy Audit Implementation Program



In March of 2013, the Arizona Department of Agriculture's (ADA) Agricultural Consultation and Training (ACT) renewed the contract with the USDA's Natural Resources Conservation Service (NRCS) to provide On-Farm Energy Audits at no cost to producers statewide. The program was designed to find on-farm energy inefficiencies with detailed on-site auditing and a follow-up report with specific corrective recommendations. Two months of this federal funding carried over to Arizona's 2015 fiscal year. These audits were completed on farms, nurseries, concentrated animal feeding operations and ranches to evaluate and reduce energy consumption.

EnSave was the third-party vendor used to analyze and evaluate the energy audit data. They are NRCS certified Technical Service Providers (TSP) and follow the American Society of Agricultural and Biological Engineers (ASABE) Standards. ACT Staff completed training and received certification by EnSave as data collectors for the energy audits. ACT Staff provided support for the NRCS Agricultural Energy Management Plans, Rural Development REAP grant and loan applications as well as other energy efficiency programs for producers. ACT Staff acted as the data collectors for the auditing company. This data included information on motors, pumps, generators, compressors, lighting, ventilation, and irrigation systems on the property.

- In fiscal year 2015 (July - August 2014) three applications were submitted to EnSave to receive audits. These included one application on a concentrated animal feeding operation and two applications for farms.
- From the three applications submitted in fiscal year 2015, all three audits were completed.

Good Handling Practices/Good Agriculture Practices (GHP/GAP)



The Agricultural Consultation and Training (ACT) Program of the Arizona Department of Agriculture (ADA), through a United States Department of Agriculture-Agricultural Marketing Service (USDA-AMS) Specialty Crop Block Grant Program grant, has entered into a cooperative agreement with The University of Arizona to develop and make available a course for food safety education. GHP/GAP is a voluntary, on-site farm verification program which

has been developed for growers, harvesters, processors, warehouses, transportation lines and gardeners of specialty crops (fresh fruit, vegetables and tree nuts). This training is in preparation for a USDA food safety audit and certification. Certification allows for produce sales to restaurants, farmers markets and other wholesalers with the assurance of established food safety protocols. Good Handling Practices (GHP) refers to post-harvest operations, while Good Agriculture Practices (GAP) refers to on-farm operations and systems, ensuring these crops are produced, packed, handled and stored in the safest manner possible to minimize risks of microbial food safety hazards.

Dr. Kurt Nolte, University of Arizona Cooperative Extension, has developed training sessions which are presented at various locations around the state. Dr. Nolte and ACT's Food Safety Projects Coordinator collaborate and co-present the workshops to a diverse group of individuals involved with specialty crops in Arizona.

There is no cost to attend the workshop or for training materials, which include monitoring logs and tracking forms. The Food Safety Programs Coordinator follows up with workshop attendees, offering one-on-one consultations to customize their food safety plans while reviewing their operation. These are also free of charge. Further incentivizing food safety, ADA will offset the cost of a (successful) audit with a cost share grant of up to 75% while funds remain available from USDA-AMS.

In 2015 ACT's GHP/GAP Program assisted 378 individuals representing 175 Arizona specialty crop operations.

Livestock & Crop Conservation Grant Program

The Livestock & Crop Conservation Grant Program (LCCGP) was created on September 18, 2003, by the Arizona State Legislature to assist ranchers and farmers with the implementation of conservation projects that ultimately provide for the preservation of open space. The Arizona Department of Agriculture is charged with developing, implementing and managing the program. The LCCGP is funded through the Proposition 303 Growing Smarter Statute that was passed by public referendum in 1998. Approximately \$1.8 million was available in grant funds each year, through fiscal year 2011.

Per the grant program authorizing statute, A.R.S. §41-511.23 (G) (1), eligible applicants include individual landowners and grazing and agricultural lessees of State or Federal lands that desire to implement conservation based management alternatives using livestock or crop production or reduction practices to provide wildlife habitat or other public benefits that preserve open space. Grant funds may be used for projects taking place on private, State and Federal land. The grant program has been run on a biennial grant cycle.



During the two-year cycle, the LCCGP grant manual, grant guidelines, and rating criteria are subject to a public comment period. The fifth grant cycle was completed in fiscal year 2013. This grant cycle utilized unspent grant funds from all previous grant cycles.

Several State and Federal agencies are working together on a large scale geographical conservation project that would utilize additional unspent grant funds from all previous grant cycles and leverage funds from other agencies, totaling \$3,000,000. This project is scheduled to take place in FY 2016.

During fiscal year 2015, the LCCGP Coordinators worked to monitor completed projects from the previous grant cycles. The following types of projects were completed by grantees:

- Utilization of funds as match/cost share to other conservation grants. For example, if the applicant is participating in, or plans to apply for, a USDA Natural Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) grant which typically requires that the applicant provide a percentage of the total project funding, LCCGP funds could be awarded for use as the required cost share funds to the EQIP contract.
- On-the-Ground Conservation Projects (for example: riparian fencing, water resource development, grassland restoration).
- Livestock deferment funding in relation to a conservation practice or project. For example, if the applicant chooses to implement a conservation management practice such as prescribed burning or herbicide application that requires the deferment of livestock, the applicant may apply for LCCGP funds to cover the costs associated with deferring livestock.



The LCCGP Coordinators continue to administer the existing grant contracts from all previous grant cycles. Throughout the duration of the grant project, the LCCGP Coordinators provide administrative support and information, answer questions and concerns and assist the grantees with reimbursement and funding advance requests. At the close of FY15, 56 of the 56 grantees from the fiscal year 2005 cycle, 69 of the 70 grantees from the fiscal year 2007 cycle, 59 of the 63 grantees from the fiscal year 2009 cycle, 36 of the 43 grantees from the fiscal year 2011 cycle and 13 of the

13 grantees from the fiscal year 2013 cycle had completed their proposed grant projects. Additionally, throughout fiscal year 2015, more than \$355,000 was disbursed to grantees to work on their contracted projects.

LCCGP Coordinators also continue to monitor active projects funded by grant funds. Through on-site visits to see what has been completed, they are able to ensure that the funding is being utilized properly and provide additional technical services to grantees.

Specialty Crop Block Grant Program-Farm Bill



On December 21, 2004, the Specialty Crops Competitiveness Act of 2004 authorized the USDA to provide State assistance for specialty crops. Since 2004 several amendments have authorized further funding through 2018. Specialty Crops are defined as fruits, vegetables, tree nuts, dried fruits, and nursery crops (including floriculture). The value of U.S. specialty crops is equivalent to the combined value of the five directly-subsidized program crops. However, sixty percent of all

ADA received \$1,105,843.55 in grant funds in 2014 and distributed the money to 15 sub-grantees and executed 18 grant award agreements.

farmers do not raise program crops and do not receive direct subsidies. The purpose of this Act is to help address this inequity between program crops and specialty crops.

The Arizona Department of Agriculture's Specialty Crop Block Grant Program - Farm Bill is administered by the ACT program. In fiscal year 2015, Arizona's State Plan was approved by the U.S. Department of Agriculture's Agricultural Marketing Service (AMS), and a cooperative agreement, which provided \$1,105,843.55 in grant funds to the ADA, was executed on September 24, 2014. The SCBGP-FB Program Coordinators worked with fifteen sub-grantees and executed eighteen grant award agreements, in addition to providing guidance and assistance with quarterly reports and reimbursements throughout the year.

On March 16, 2015, AMS announced the availability of \$63 million in federal fiscal year 2015 funding. The funding is authorized by the Agricultural Act of 2014 (Farm Bill). Each state department of agriculture is eligible to receive a base grant of approximately \$210,837. In addition, AMS allocated the remainder of the grant funds based on the proportion of the value and acreage of **specialty** crop production in the state. The 2015 base grant amount plus the AMS assigned value of specialty crop production for Arizona is \$1,211,430.59. The SCBGP-FB Program Coordinator submitted the Arizona State Plan to AMS on July 8, 2015.

Arizona Citrus Research Council



The Arizona Citrus Research Council was created by A.R.S. §3-468 to support the development of citrus research programs and projects within the Arizona citrus industry. The Council is funded by a per carton (1.5 cents) assessment paid by Arizona Citrus producers. Last year, the Arizona citrus industry produced more than 2.8 million cartons of grapefruits, lemons, oranges and tangerines. Council programs and projects target production, plant pest and disease control, efficient fertilization and irrigation techniques and variety development. The Council is comprised of five citrus producers

appointed by the Governor:

- Two producers from District One (including Yuma County)
- One producer from District Two (Maricopa, Pima and Pinal Counties)
- Two producers at large

Fiscal Year 2015 Financial Status - Arizona Citrus Research Council

Revenue	\$42,769.37
Expenses	\$14,768.00

Legislation passed in the 2012 legislative session created the Arizona Citrus Trust Fund which holds the Council's revenue in trust.

Arizona Iceberg Lettuce Research Council



The Arizona Iceberg Lettuce Research Council was created by A.R.S. §3-526 to conduct research for an Arizona industry that produced approximately 20 million cartons of iceberg lettuce in FY 2015. The Council is funded by a per carton

(.004 cents) assessment paid by Arizona iceberg lettuce producers. Council members are appointed by the Governor and consist of seven producers:

- Four producers from District One (including Yuma and La Paz Counties)
- Three producers at large

The Council reviews and awards a wide range of research proposals on topics such as variety development, lettuce pest eradication and for programs relating to food safety, production, harvesting, handling and transporting lettuce from fields to markets. During fiscal year 2015, the Council continued to support research projects by granting over \$85,000 to the University of Arizona. Some examples of research grant projects include reduced water usage during summer soil flooding to manage Sclerotinia drop, lettuce transplanting, evaluation of a genetic solution to heavy metal risks in lettuce and insect management in desert head lettuce.

Fiscal Year 2015 Financial Status - Arizona Iceberg Lettuce Research Council

Revenue	\$80,705.98
Expenses	\$89,152.55

Legislation passed in the 2012 legislative session created the Arizona Iceberg Lettuce Trust Fund which holds the Council's revenue in trust.

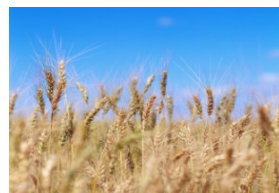
Arizona Grain Research and Promotion Council

The Arizona Grain Research and Promotion Council was created by A.R.S. §3-581 through §3-594 and utilizes grower 'check-off' funds to aid in marketing wheat and barley, participate in research projects and other programs that assist in reducing freshwater consumption, develop new grain varieties and to improve grain production, harvesting and handling methods.

Research continues to be a top priority of the Council by continuing support for the research activities of the University of Arizona. Research projects focused on development of field testing of sensor-based algorithm for N-fertilizer management of Arizona Durum wheat and developing sustainable metrics for water use in Arizona grain production. More than \$17,000 was granted for research projects during fiscal year 2015.

The Council supports the activities of the U.S. Wheat Associates, the export market development arm of the United States wheat industry. This support is important because more than half of Arizona's Durum wheat is exported. The council collaborates with the California Wheat Commission to conduct an annual crop quality survey of the Desert Durum® crop in Arizona and Southern California and publishes the results for buyers around the world.

Fiscal Year 2015 Financial Status - Arizona Grain Research and Promotion Council



Revenue	\$154,366.35
Expenses	\$116,923.56

Legislation passed in the 2012 legislative session created the Arizona Grain Research Trust Fund which holds the Council's revenue in trust.

Agricultural Employment Relations Board



The Agricultural Employment Relations Board was created by A.R.S. §23-1386 in 1993 to provide a means to bargain collectively that is fair and equitable to agricultural employers, labor organizations and employees to: provide orderly election procedures, resolve questions concerning representation of agricultural employees and declare that certain acts are unfair labor practices that are prohibited and subject to control by the police power of this State. The Board has an annual budget of \$23,300.

The Board is comprised of seven members (and two alternates):

- Two agricultural employers/management
- Two organized agricultural labor representatives
- Three public members, from which a Chairman must be selected.

Animal Health and Welfare Program

Priorities and Oversight

The first priority of the Animal Services Division's (ASD) Animal Health and Welfare Program (AHWP) is the prevention of certain diseases of livestock, poultry and commercial fish; and if established, their subsequent eradication. Relatedly, AHWP protects the public from diseases which are transmissible from livestock to people. Field staff in AHWP enforce all ownership and dominion laws as well as specific equine neglect and livestock cruelty statutes. Additionally, via the State Emergency Response and Recovery Plan (SERRP), AHWP is involved in a myriad of human and animal welfare contingencies. Lastly, the staff of the Meat and Poultry Inspection Program is responsible for the oversight of livestock and poultry slaughtering as well as processing.

Animal Health Programs

There were a total of 96 Administrative Orders issued this fiscal year. Of this amount, 88% were for Vesicular Stomatitis Virus (VSV) suspects, and the remaining 14% were for illegal entry of livestock, Tuberculosis suspects, and High Pathogenic Avian Influenza (HPAI) suspects.

The Department managed two VSV outbreaks in our state. The Department also participated in a conference for Western State Veterinarians to revise the protocol for testing and quarantines of VSV cases in light of the delisting of the disease as a Foreign Animal Disease by the World Animal Health Organization. Some states and Canada imposed restrictions on horse imports during the outbreaks, which diminished participation in major horse exhibitions.

An outbreak of HPAI affected 21 states during 2015 and resulted in the destruction of 50 million chickens and turkeys. Arizona was not directly affected and is currently working on plans to protect the poultry industry and respond if the disease returns.

Ongoing State / Federal / industry programs for the control and elimination of:

- Brucellosis
- Tuberculosis
- Pseudorabies
- Equine Infectious Anemia
- Scrapie

Ongoing State / Federal / industry programs for the benefit of public health:

- Rabies control
- West Nile Virus and other equine encephalomyelitides (zoonoses)
- National Poultry Improvement Plan (control of multiple diseases)
- Animal Disease Traceability
- Multiple obligations under the Emergency Support Functions of SERRP

USDA Cooperative Agreements

Traditionally, various animal health surveillance programs have been funded via cooperative agreement grants with the United States Department of Agriculture (USDA) / Animal and Plant Health Inspection Service (APHIS) / Veterinary Service (VS). These have primarily included avian health, cattle health, equine health, swine health, scrapie, and zoonotic concerns.

April 1, 2015 began the new reporting year for USDA / AHPIS / VS. Their agreements fall into one of two categories: Animal Disease Traceability (ADT) or Umbrella (general program disease surveillance).

Animal Disease Traceability System

The ADT cooperative agreement will be in furtherance of goals that have been in place for several years – specifically that of improving trace back of animals after a given disease has been identified in livestock. The goal is to be able to trace back to origin any disease within 48 hours of its recognition. This is a challenging goal, and due to our current data management system and staffing levels, it will be difficult to obtain. It could be accomplished with new and better technology that would allow for digital searches of Certificates of Veterinary Inspection (CVI) and vaccination and testing documents with current manpower. Testing of the system is currently being done every quarter as part of the cooperative agreement.

Many opportunities exist to educate producers through continued dialogue. We also have the opportunity to obtain more premise identifications. Better identification of populations at risk improves the quality of the response. Better information in regards to location of populations at risk improves the speed and efficiency of the response. Both strategic aims are enhanced via the ADT plan. This ability to quickly locate and decrease the spread of food animal diseases will give the Arizona consumer greater confidence in our products.

Umbrella Grant: Foreign Animal Disease Surveillance Program

Early recognition of an animal disease outbreak is essential to reducing the impact of a devastating disease on the industry in Arizona. This cooperative agreement has four parts which include general surveillance, diagnostic testing, outreach and education, along with preparedness and response. Protecting the health of food producing livestock and poultry will result in an ongoing source of wholesome food, reduce the likelihood of animal diseases causing human health problems, and preserve the economic viability of Arizona agriculture as a whole.

Arizona Livestock Incident Response Team investigations involving livestock were conducted during this reporting period in conjunction with the Arizona Veterinary Diagnostic Laboratory. None of these were found to be a Foreign Animal Disease (FAD). The State Veterinarian's Office has responded to some FAD investigations with the outbreak of VSV in our equine industry. This was extremely important when cattle were involved as VSV may mimic many devastating FADs. To this date, all have tested negative for FADs. One of our Assistant State Veterinarians attended the Foreign Animal Disease Diagnostician (FADD) course at Plum Island, NY. Having an FADD in the Department allows for a more rapid response to investigations and less dependence on USDA / APHIS / VS during the initial investigation.

The Department's work has been very successful in the eradication of several federal program diseases and the State has achieved a "Free" status with both brucellosis and tuberculosis. Even though the status is free, the Department has followed up with a number of suspect cases from cattle being tested for interstate movement, but hasn't found any positive animals through diagnostic testing.

Arizona's voluntary National Poultry Improvement Plan (NPIP) was recently established for hobbyist and exhibition poultry and game bird breeding flocks and products. The State Veterinarian's Office has worked in cooperation with the Division's Egg Program to hire an NPIP Coordinator who will work with local breeders and producers to do testing and inspections while educating them on biosecurity. NPIP is about disease monitoring, sanitation and record keeping. Though the newly established NPIP program is voluntary, any person moving hatching eggs, chicks, or older birds across state lines may be required to become NPIP-certified in order to meet the other state's entry requirements and the new Federal Interstate Movement Law requirements. This program should also allow us a better opportunity for surveillance along with the educational aspect to the public. The Department has an NPIP program for

commercial producers. The Department has been doing Avian Influenza (AI) monitoring throughout the state and to date no birds have tested positive. One of the goals of the NPIP program is to continue and increase the AI surveillance.

A swine component was added to the grant beginning June 15, 2014 and ending September 30, 2015. The main objective of the swine component is to conduct surveillance on high risk swine operations for FADs. This is mainly done through licensing and inspections of garbage feeding operations to prevent disease from getting into Arizona's swine industry. We also monitor for the swine enteric corona virus diseases, while utilizing this opportunity to educate at exhibitions around the state.

One of the program's other goals is to monitor diseases in animals that are transmissible to humans (zoonotic). We have worked with the Arizona Department of Health Services (ADHS) to make sure that the public is educated and protected during outbreaks of Plaque, Leptospirosis, and rabies. We have also participated in monthly conference calls which keep an exchange of information between departments. We have also been involved in joint educational outreach events with ADHS for public education and rabies vaccination clinics in southern Arizona.

Annual Licenses

Aquaculture

The Aquaculture Program regulates commercial operations that grow, transport, and process fish and shrimp. These are the numbers of issued licenses: 17 transporters, 9 processors of fish and shrimp for human consumption, 17 growing facilities, 7 research and educational facilities and 5 operations that charge a fee for fishing.

Feedlots

Twenty-two feedlot licenses were issued. This is only required for feedlots with 500 or more head of beef cattle.

Inspection Data Tracking

The Livestock Inspection Program tracks field activities through the State Forester's WildCAD dispatch system. Since 2002, a number of activities have been closely monitored and include such items as the number of inspections, the number of investigations for livestock welfare complaints, stray livestock, livestock theft and dogs chasing/killing livestock. This data is summarized in the table titled "FY 2015 Calls for Service from the Public" at the end of the ASD section.

Surveillance Statistics

Currently, more than 3,900 producers are approved to use the Self-Inspection Program. Livestock owners understand the value of documenting animal movement and have accepted responsibility for intrastate documentation through Self-Inspection certificates. Livestock Officers, Inspectors and Deputies document non-Self-Inspection activities such as the sale of range cattle and custom slaughter livestock. Exhibitions, fairs and shows have also been supportive of the "seasonal exhibition pass" implemented by rule. Livestock theft investigation and enforcement cases remain at a low level, and Arizona continues to maintain disease free status in all industry / State / Federal cooperative disease control programs.

Arizona Livestock Incident Response Team Program

The Arizona Livestock Incident Response Team (ALIRT) program was implemented through legislative authorization in FY 2005. Annual funding has been used to train and equip participating private veterinarians to conduct investigations of unusual livestock disease events and to conduct outreach and education to the livestock producers. Participating veterinarians and state staff received training in March 2015. Since its initiation, several investigations have been conducted and in every case, the response resulted in a preliminary diagnosis within 48 hours, with laboratory diagnosis confirmation soon after.

ALIRT is an emergency response program overseen by ADA and implemented through cooperation with the University of Arizona's Department of Veterinary Science Veterinary Diagnostic Laboratory and Cooperative Extension. USDA Wildlife Service and Veterinary Service actively participate in a program designed to facilitate the potential diagnosis of unexplained livestock losses. Once a problem has been discovered, various levels of response may be initiated. It all starts with the producer, local veterinarian, and/or the local University of Arizona Cooperative Extension Office. If warranted, trained ALIRT private veterinarians will respond to the scene, start the investigation and collect samples. This is followed by a conference call of the ALIRT steering committee that determines what, if any, additional actions are necessary.

The cost of case work-up is covered by ALIRT program funding and includes expenses for the ALIRT private veterinarian and other response personnel, as well as laboratory expenses related to the diagnosis. Once a diagnosis is made and/or a treatment program is implemented, the expense becomes the responsibility of the producer. The producer plays a key role in this process, starting with the reporting of a problem in his herd. The producer also is important in preparing a herd history and identifying any contributing factors that may assist in diagnosis. The ALIRT program only responds at the invitation of the owner or manager and is available to individual producers who have significant unexplained animal illnesses and/or death or if an area or region is having multiple suspicious livestock losses. The ALIRT program was designed for the producer and all information collected remains confidential. Emergencies are reported by calling the Arizona State Veterinarian at 602-542-4293 or the University of Arizona Veterinary Diagnostic Laboratory at 520-621-2356.

Meat and Poultry Inspection Program

The Meat and Poultry Inspection (MPI) Program is a federal-state cooperative program, funded 50% from the State General Fund and 50% by USDA / Food Safety Inspection Service (FSIS). The program oversees slaughter and processing of amenable meat animals and poultry which are offered for official inspection prior to sale to the public. Operating to help ensure both food safety and truth in labeling to consumers, inspectors visit regulated facilities on a daily basis. The program authority is established by state statutes and rules, the federal Meat Inspection Act, and the federal Poultry Products Inspection Act.

State MPI personnel monitor general plant and equipment sanitation, processing sanitation, good manufacturing practices during production, ante mortem and post mortem inspection at slaughter, humane handling, Hazard Analysis Critical Control Point (HACCP) implementation, multi-ingredient formulation, the use of approved labeling, net weights, and perform laboratory sampling programs as requested. They also verify compliance with State and Federal regulations prior to allowing the inspected and passed triangle shaped "mark of inspection" to be applied to applicable products.

ADA inspectors receive training including HACCP inspection procedures, Sanitation Standard Operating Procedures and animal ante mortem and post mortem inspection procedures for disease.

Each day a plant operates, an MPI employee makes at least one unannounced visit to review production activity. If discrepancies are found, they are documented and then discussed with plant management to

determine what corrective actions will be taken to ensure that no unwholesome or mislabeled product leaves the plant. In slaughter plants, an MPI Inspector observes each animal presented for slaughter both alive and at various stages during the carcass dressing procedure looking for any pathology that may be present.

Unfit and/or unwholesome carcasses and parts are removed from the human food chain and de-characterized for inedible purposes. Humane handling is strictly enforced to ensure no animal is mistreated or improperly stunned at slaughter.

Sanitation is observed and verified each day a plant operates by a pre-operational check of facility and all equipment prior to the start of operations and/or operational sanitation checks to verify sanitation is maintained during production.

Hazard Analysis Critical Control Point (HACCP) verification is performed by reviewing the HACCP plan and all supporting documentation. Direct observation or review of records is performed at all Critical Control Points. Corrective actions are taken when a deviation occurs. Verification and reassessment is performed as required by regulation.

Labels are reviewed to show that they reflect the product is actually as the label states and that the label meets all labeling requirements per regulation, including approval and allergen declaration. Formulation is observed to verify the product is being made to meet product standards and is being made as approved. Net weights are verified on certified scales weighing random lots of finished product to ensure compliance.

Product samples are taken as requested by the Program Manager in selected establishments and delivered to the State Agricultural Laboratory to be analyzed for the pathogen of concern. In the event of non-compliance, establishments are notified by written non-compliance reports and regulatory control actions are taken as needed to insure affected product does not reach the consumer.

Inspectors also periodically visit other processors known as "custom exempt," which are firms that process meats, game and poultry for the personal consumption of the owner. These types of processors may not sell meats to the general public without obtaining an official slaughter and processing license, and likewise those who have animals slaughtered at a custom exempt processor may not sell the meat.

More than 600 food safety samples per year are submitted to the State Agricultural Laboratory to be analyzed for *E-coli* 0157:H7, non-0157 Shiga Toxin *E-coli* (STEC), *Salmonella*, *Listeria Monocytogenes* or violative antibiotic residue. Additionally, antibiotic residue samples requested by USDA / FSIS and Tuberculosis samples from suspect animals at slaughter were also taken. All of this information is entered each day by the inspectors into a new computer database system mandated by FSIS called the Public Health Information System (PHIS). This system tracks all aspects of the meat inspection program.

Almost 6,500 on-site food safety inspections were performed at official establishments and custom exempt facilities this past year. No food-borne illnesses were reported from any Arizona official establishment this past year.

Meat and Poultry Compliance Program

Compliance is an integral part of the MPI Program. Arizona Revised Statutes provide the authority and responsibility to protect consumers by assuring meat and poultry products are wholesome, not adulterated and properly labeled. In-commerce surveillance and reviews are conducted at distribution centers, public warehouses, retail stores, restaurants, schools, prisons and poultry-exempt facilities. Surveillance reviews are conducted to ensure industry compliance and consumer safety. These

surveillance reviews consist of product and facility assessments, food safety, sanitation, hazard control and labeling assessments.

Compliance also investigates food safety, misbranding and other violations of law to protect public health and to support criminal, civil and administrative action. An investigation includes; planning, decision-making, evidence collection, identification, custody, interviews, photographic evidence, reports of investigation and investigative liaison with attorneys. The program is authorized to identify, detain and control adulterated, misbranded, illegally imported and other illegal or unsafe meat and poultry products so they do not reach consumers.

If requested, Compliance will assist with food safety related illness outbreaks and epidemiological investigations. This consists of conducting product trace back and trace forward. The program coordinates with USDA and various statewide health departments in conducting surveillance reviews and investigations of retail stores and restaurants to ensure that meat and poultry products are wholesome and properly labelled. Compliance will also conduct investigations of illegal slaughter and/or processing operations statewide. Compliance has a database of over 100 licensees which include; warehouses, distributors, jobbers, dead stock haulers, brokers and meat storage.

Dairy & Dairy Products Inspection Program

Dairy inspection staff regulate all aspects of the dairy industry, from the dairy farm until products leave the processing plant. Beginning at the farm, inspectors review plans submitted for construction of new farms and the remodeling of existing farms. Farm inspections are conducted to check for compliance in sanitation, milking procedure, equipment condition, and usage/labeling of drugs for animals, along with other requirements. Water and milk cooling systems are reviewed and sampled for compliance with public health standards.

Milk produced is sampled and tested for compliance with regulatory requirements. Bulk milk tankers, which are used to collect and transport milk to processors, are inspected and licensed by the dairy inspectors.



Dairy inspectors regulate dairy processing plants ranging from small cheese makers to plants processing millions of pounds of milk per day. At plant inspections, inspectors review plant processing records, and facilities are inspected for compliance with sanitation and maintenance requirements. Pasteurization systems are tested quarterly and the controls are sealed by the inspector. If regulatory seals are broken, for maintenance or repairs, the plant must immediately notify the Dairy Program and the equipment must be retested and sealed

by the inspector or licensed industry sealer. Arizona milk processors use a variety of approved pasteurization processes. These processes include the relatively simple batch pasteurizer and proceed in complexity to systems called Ultra Pasteurization, which greatly extend the shelf life of dairy products.

Inspectors also check packaging/bottling facilities and processes at dairy plants. Some facilities manufacture containers and closures for dairy products. These facilities are also inspected and their products are sampled and tested.

Finished milk and milk products are collected by Dairy inspectors and submitted to the State Agriculture Laboratory for testing. On average, almost 3,000 samples are collected and submitted each year.

Universal Sampling System

Regulations require regular testing of milk produced by Grade A dairy farms. In Arizona, dairy farms are spread out over a large geographic area. Under the "Universal Sampling System," milk hauler/samplers are licensed by ADA after passing an exam. These hauler/samplers are also evaluated in the field by dairy inspectors to assure that their procedures are correct. The samples collected by licensed hauler/samplers may be randomly tested by the state and the results used for official purposes. This system reduces the personnel and the driving time that would be required if the State had to collect the samples from each individual farm.

Raw Milk Consumption

The majority of milk and milk products produced in Arizona are pasteurized. This means that the milk was subjected to a process of heating the milk and holding it a specific temperature for a specified time period (161 degrees for 15 seconds, for example) in approved equipment. This process is known to kill harmful microorganisms which may be present.

A small amount of milk sold in Arizona is packaged and sold as raw milk for consumption. This milk is not subjected to the pasteurization process. Although this milk is required to meet the same standards as pasteurized milk, it can potentially contain pathogenic organisms. For this reason, raw milk for consumption is required to have a warning statement on the label, so that consumers can be informed of the potential risk. It is illegal, in Arizona, to sell raw milk for consumption without a license. During FY15 there were four licensed facilities that sell raw milk for consumption.

Interstate Shipment of Milk

Arizona participates in the National Conference on Interstate Milk Shippers (NCIMS). This program creates uniform standards for evaluation of Grade A milk and milk products. This allows for milk to be transported between States and accepted via reciprocity. The Food and Drug Administration (FDA) certifies State personnel, who then conduct audits, called ratings on producers and processors that wish to be listed as Interstate Milk Shippers (IMS). The FDA periodically conducts check ratings to assure uniformity in the system.

The NCIMS is also responsible for changes and updates to the Pasteurized Milk Ordinance (PMO), which is the main document used to regulate Grade A milk and milk products. The NCIMS convenes every two years to consider and vote on proposed changes. Arizona is a voting delegate at these conferences.

Egg & Egg Products Inspection Program

Egg Inspection Program staff provides inspection services to the public, industry and the federal government. The Egg Inspection Program is funded entirely from a "mill fee" assessment from industry on each dozen of eggs or pound of egg products sold in Arizona. The program has operated on industry assessments since 1940.

Program staff inspects shell eggs and egg products from production at laying facilities to wholesalers and retail stores. Inspectors verify that products has been produced in accordance to the A.R.S. and is held at temperatures of 45° Fahrenheit for eggs and 0° Fahrenheit for frozen egg products. Inspectors also verify proper packaging, sanitary handling, dating and weighing of eggs at production facilities,

warehouses or retailers for product originating out-of-state. Inspectors also check Nest Run Egg producers for proper handling, labeling and registration with the Department. Nest Run Egg producers are limited to selling a total of 750 dozen unwashed ungraded eggs annually.

Eggs processed or sold in Arizona are marked with mandatory expiration dates and has one of the shorter code dating requirement at 24 days from packing. This helps to ensure that eggs continue to meet the marked grade after they are purchased by consumers.

USDA Inspection and Grading Program

The Department also maintains cooperative programs with the USDA to provide “grade labeling” services to the industry upon request. These cooperative programs also include surveillance and enforcement under the federal Egg Products and Inspection Act, which regulates the movement and processing of certain types of under-grade eggs to keep them from entering the market. ADA also enforces the Agricultural Marketing Act of 1970.

Inspectors provide inspection services for USDA’s School Lunch Program for poultry purchases made on behalf of school districts statewide. Warehouses receive truckloads and rail car deliveries of poultry products that our inspectors check for proper handling in transit, including temperature checks.

Graders perform both temporary and resident (in-house) grading services to the egg industry in Arizona. Nine full-time State employees are stationed at four packing plants and provide inspection / grading services 365 days a year, 7 days a week. Under this USDA program, resident graders continually monitor plant sanitation, processing temperatures, handling, and holding cooler temperatures. Eggs packed under USDA program supervision are eligible to be marked with USDA shield grade marks or other USDA identification. This USDA grade marks are valuable because many entities require it for sale, such as some grocers, commercial foodservice, foreign countries and the U.S. military.

Emergency Preparedness and Response

Palo Verde Nuclear Generating Station

The Department is an integral part of the state and county response to any emergencies related to the Palo Verde Nuclear Generating Station (PVNGS) located west of Phoenix. With three reactors, this is the largest nuclear power plant in the U.S. with the capacity to serve millions of homes.

In cooperation with State, county and Federal agencies, ADA participates yearly in nuclear preparedness drills. Every other year and every sixth year, federal agencies grade the State response during drills and prepare a written evaluation. Every other year, an exposure exercise is conducted with ingestion pathway exercises every sixth year. An ingestion pathway exercise is critical to protecting the food supply after a nuclear incident. A passing grade from cooperating agencies is required for Palo Verde to maintain an operating license by the Nuclear Regulatory Commission.

The food inspection programs are integral to departmental participation in such drills, which also includes animal health veterinarians and Livestock Officers.

ADA participated in two exercises in 2015. The first was a two-day tabletop exercise which focused on economic recovery after a radioactive release with particular emphasis on impacts to the agricultural sector.

The second exercise was a hostile action based scenario in which bad actors caused intentional damage to PVNGS. This is a new type of exercise that will be practiced every eight years in order to primarily prepare law enforcement response to this type of incident.

Emergency Preparedness Exercise

ASD collaborated with the Arizona Department of Emergency Management to host a tabletop exercise titled "Animals in the Roadway." Participants in the exercise included Livestock Services Officers and Inspectors, Department of Public Safety Dispatch, County Emergency Managers, Sheriff's Offices, Fire Departments and other first responders. The key lessons learned from this exercise were legal jurisdiction over roadways and livestock during transport, humane methods of euthanasia for injured animals and how various agencies can work together during an incident.

Emergency Response

In June 2015, ASD received a request from the Pinal County Sheriff's Office to assist in the evacuation of livestock from a wildfire near the town of Kearny, Arizona. Within a few hours, ADA-ASD had deployed five Livestock Services Officers, three Livestock Inspectors, one Assistant State Veterinarian, eight trucks, six livestock trailers, one mobile veterinary unit, and one incident response trailer. ASD staff provided safe relocation to several animals including the prize Arab stallion of an Arizona State Senator.

FY 2015 Calls for Service from the Public

Inspections	
Ownership	4,546
Butcher	1,135
Highway and Road Kill	83
Total	5,764
Welfare	
Equine	750
Cattle	162
Goats	58
Sheep	13
Swine	9
Total	992
Out of Place	
Loose and Stray	898
Theft	55
Total	953
Other	
Dogs Chasing/Killing Livestock	28

Citrus, Fruit & Vegetable (CFV)

Standardization and Federal State Inspection

Arizona ranks third in the nation for overall production of fresh market vegetables. Arizona acreage produced over 89.6 million cartons of fresh produce last year. Arizona ranks second in the nation in production of iceberg lettuce, leaf lettuce, romaine lettuce, cauliflower, broccoli, spinach, cantaloupes, and honeydews.

The top ten commodities, which account for 85% of the state's total produce production, based on carton count for fiscal year 2013 are as follows:

Iceberg lettuce	23,448,232	Cabbage	3,785,527
Romaine lettuce	17,229,697	Broccoli	3,325,700
Cantaloupe	9,507,459	Spring Mix	3,317,097
Leaf lettuce	5,392,560	Cauliflower	2,956,785
Spinach	4,760,135	Honeydew	2,669,039

As detailed below, the Citrus, Fruit and Vegetable Standardization Program and the Federal State Inspection Program conducted 22,416 inspections last year. In addition, the Citrus, Fruit and Vegetable Standardization Program issued 551 licenses to the produce industry.

Industry Funded -- Industry Supported

Both of these programs are entirely self-funded and receive no general fund allocations. Industry supports the Citrus, Fruit and Vegetable Standardization Program through license fees and carton assessments, which are reviewed monthly and adjusted yearly. The Federal State Inspection Program is entirely funded on a fee-for-service basis.

The Citrus, Fruit and Vegetable Advisory Council, by statute, is comprised of governor-appointed citrus producers from specified counties, fruit or vegetable producers from specified counties, an iceberg lettuce producer from Yuma County and an Arizona apple or tree fruit producer. This group of leaders of their respective industries meets quarterly with staff of the Citrus, Fruit and Vegetable Program to review program policy and budgetary items.

Standardization Program

Arizona citrus, fruit and vegetable producers rely on the Arizona Department of Agriculture for increasing the potential for domestic and international marketing, protecting against exporting, importing, selling of substandard produce by development, and applied enforcement of uniform standards. Under the recommendation of the Citrus, Fruit and Vegetable Standardization Advisory Council, the program has evolved towards a food safety auditing services program instead of a produce quality enforcement program. It is the Citrus, Fruit and Vegetable Standardization Program (CFV) that assists the Arizona produce industry, including growers, shippers, contract packers, dealers and commission merchants in complying with product quality standards.

Federal-State Inspection Program

This year the Citrus, Fruit and Vegetable Standardization Program successfully completed its fourteenth year managing the Federal State Inspection Service, Fresh Produce Inspection and Terminal Market Programs in Nogales, Phoenix and Yuma under a cooperative agreement with United States Department of Agriculture. Mandatory as well as voluntary United States Department of Agriculture inspections are performed by Arizona Department of Agriculture staff (Federal State inspectors) and take place primarily at the shipping point (point of origin), port-of-entry (Arizona-Mexico border) or the terminal market (point of destination).

This federal program administered by the Department also enforces United States import requirements and marketing order restrictions at the international border between Arizona and Mexico. Significantly, Nogales is the second busiest port-of-entry for produce in the United States. Last year, Department staff inspected at total of 23.3 million packages, with more than 2.5 million packages of field tomatoes, 641 thousand packages of greenhouse tomatoes, 1.9 million packages of avocados and 16.1 million lugs of table grapes imported from Mexico and a variety of other commodities, including watermelons, peppers, cucumbers, squash, onions and citrus.

It is important to note that the Citrus, Fruit and Vegetable Program and the Shipping Point Inspection Program in Yuma and Phoenix developed cost-reduction efficiencies for Arizona's agriculture industries through the cross-training of department inspectors to handle both State and Federal inspections as well as phytosanitary certifications.

Third Party Audit Program

At the request of Arizona fresh produce industry representatives, Arizona Department of Agriculture, along with other western State Departments of Agriculture and the United States Department of Agriculture, developed a Third Party Audit Program within the existing framework of USDA Agricultural Marketing Service Federal State Inspection. The resulting program is designed to audit the Good Agricultural Practices and Good Handling Practices for the produce industry. Federally-licensed State inspectors perform these audits at industry's request.

Arizona Leafy Green Products Shipper Marketing Agreement (AZ LGMA)

In September 2007 Arizona farmers came together to raise the bar for food safety. The produce industry solicited for the first Marketing Agreement in the history of the Arizona Department of Agriculture. As a result the Arizona Leafy Green Products Shipper Marketing Agreement (AZ LGMA) was formed. This agreement was renewed for an additional four years in October 2011.

The general purpose of this Marketing Agreement is to enable shippers of leafy green products to engage in mutual help and continue the production of high quality leafy green products grown in this state. The primary purpose of this Marketing Agreement is to authorize signatory shippers to certify safe handling, shipment and sale of leafy green products to consumers by adopting leafy green best practices and by using an official mark. The Marketing Agreement will permit the advertisement and promotion of the use of the official mark and the education of consumers about the meaning of the official mark.

Members of the AZ LGMA are working collaboratively to protect public health by reducing potential sources of contamination in Arizona-grown leafy greens. Leafy green products of the AZ LGMA include: iceberg lettuce, romaine lettuce, green leaf lettuce, red leaf lettuce, butter lettuce, baby leaf lettuce (i.e.,

immature lettuce or leafy greens), escarole, endive, radicchio, spring mix, spinach, cabbage, kale, arugula and chard.

Assessments on signatories to the Arizona Leafy Green Products Shipper Marketing Agreement are based on cartons or carton equivalents of affected commodities sold. Shipper means a person that engages in shipping, transporting, selling or marketing leafy green products under his or her own registered trademark or label or a person who first markets the leafy green products for the producer. It does not mean a retailer.

Currently the AZ LGMA has 35 signatory shippers that represent 97% of the volume leafy greens grown in Arizona. AZ LGMA membership requires verification of compliance with the accepted food safety practices through mandatory government audits. University and industry scientists, food safety experts and farmers, shippers and processors developed these food safety practices. These companies have committed themselves to sell products grown in compliance with the Arizona Metrics, food safety practices accepted by the AZ LGMA Marketing Committee.

Department Pride in the Statewide Gleaning Project

An Executive Order was issued to extend the Arizona Statewide Gleaning Project. Gleaning is the harvesting of surplus crops, and the governor's project distributes these gleaned crops to those in need. The Arizona Department of Agriculture plays an integral role in the statewide gleaning effort in that Citrus, Fruit and Vegetable Standardization Program inspectors notify key food bank officials of upcoming seasons, and identify potential crop donations. Participating producers are then able to donate surplus crops, instead of discarding them, by allowing volunteers, inmate labor and food bank staff to glean their fields. The program also has now evolved into receiving packed product from industry donated from distributors and shippers cold storage. Several State agencies support other portions of the program and this combined effort resulted in over 22.6 million pounds of produce collected and distributed to food banks and other organizations serving those in need during this past year.

Environmental Services Division (ESD)

The Arizona Department of Agriculture Environmental Services Division is responsible for protecting public health, agricultural workers, consumers and the environment. The Division is made up of two sections. The Licensing Section provides licensing for many of the agency programs ensuring quality customer service and appropriate cash handling. The Compliance Section protects the public, agricultural workers and pesticide handlers employed in agribusiness through field inspections and complaint follow-up to monitor proper use of crop protection products and ensuring compliance with environmental laws and rules. They also inspect any place where the non-food products: feed, fertilizer, pesticide and seed and review labels, as well as take samples for analysis at the State Agricultural Laboratory to ensure consumers are purchasing what is represented on the labels.

Staff Allocations

The Environmental Services Division had 15 full-time employee positions as of June 30, 2015. Seven of these positions are in the field and are responsible for sampling various non-food products, ensuring compliance with non-food product, pesticide use and worker protection statutes and rules.

Country of Origin Labeling (COOL)

For the sixth year, the Division worked under a federal cooperative agreement with USDA Agricultural Marketing Service and hired a part-time inspector to conduct inspections under the program. Inspections are conducted at assigned marketplaces, mainly grocery stores, across Arizona checking for compliance with the federal Country of Origin Labeling (COOL) requirements. The COOL regulations apply to fresh and frozen fruits and vegetables, fish and shellfish, beef, veal, pork, goat, and lamb/mutton, chicken, ginseng and finally peanuts, pecans and macadamia nuts. Products must bear labeling indicating the country of origin for the commodity as defined by the law. Fish and shellfish are also required to be labeled as to whether or not they are wild or farm-raised. The COOL regulations have received much scrutiny because the regulations were challenged internationally for muscle cuts of meat which currently must include where the animal was born, raised and processed. The objection is that this gives product from the United States an advantage over similar imported products. A total of 36 follow-up inspections took place at businesses that previously were inspected and had non-compliant issues.

Licensing

The centralized Licensing Section processes approximately 96 percent of licenses issued by the Department.

Office hours are from 8:00 a.m. to 5:00 p.m. Licensing is daily closed from 12:30 p.m. to 1:30 p.m. for lunch. After 4:30 p.m., paperwork is accepted but the issuance of the corresponding license may not occur until the following day. The best way to get needed forms for licensure application is to access our home page at <https://agriculture.az.gov/forms-library>.

The Department of Agriculture is committed to providing excellent customer service on a timely basis. This continues to be proven out by the many customer service survey cards returned stating what a pleasant experience it was and how helpful and friendly the employees were.

Industry Fees Protect Consumers

The Non-Food Quality assurance program is funded with no general funds. The funding comes from monies collected from: an annual \$10 commercial feed license and the \$0.20 per ton commercial feed inspection fee; an annual \$125 fertilizer license, a \$50 per brand and grade specialty fertilizer (fertilizer for nonfarm use, including home gardens, lawns, golf courses, parks and cemeteries) registration and a \$0.25 per ton fertilizer inspection fee; a \$100 per product pesticide registration; and, an annual seed license fee of \$50 for dealers and \$100 for labelers. Approximately one-half of the money collected for seed licensing is used for half a position at the State Agricultural Laboratory to perform seed quality analysis.

One hundred dollars of the fee paid for each fertilizer license and \$75 of the pesticide registration fee help support the Arizona Water Quality Assurance Revolving Fund (WQARF), which is administered by the Arizona Department of Environmental Quality (ADEQ), to be used for ground water cleanup projects. In FY2015, \$1,152,000 in fees was collected for the WQARF: \$60,055 in fertilizer fees and \$1,091,945 in pesticide registration fees.

Licensing Requires Continuing Education

The Department's continuing education efforts keep users of restricted use pesticides aware of current laws, rules and the latest in agriculture pest management to help protect the environment through efficient utilization of pesticides.

Individuals holding commercial certification are required to earn six continuing education units each year. Those holding private certification are required to earn three units each year. Private certification enables individuals to apply restricted use pesticides on land owned or rented by their employer or themselves. Commercial certification allows application on any agricultural property. Individuals holding pest control advisor licenses (those who provide written pest control recommendations) are required to earn fifteen continuing education credit hours annually.

Continuing Education Applications

ADA APPLICATIONS RECEIVED FY 2014	TOTAL APPROVED	DENIED
312	275	37

The total credit hours far exceeds the number of approved training sessions allowing credential holders ample opportunity to earn credits.

Testing Center

Tests administered by the Environmental Services Division include milk haulers, cotton seed samplers and a myriad of pesticide-use licenses. Tests are administered in Phoenix, Monday through Friday at our office, 1688 West Adams Street. To schedule a testing appointment applicants call (602) 542-3578. For people outside the Phoenix-metro area, appointments must be made by calling 928-344-7909 (Yuma) or 520-770-3035 or 520-770-3036 (Tucson).

Exams Administered in FY 2015

Test Name	Total No. of Test Administered	Pass Rate	No. of Unique Testers
Core - Private	118	92.37%	113
Core - Commercial	49	95.92%	47
Core - Golf	21	95.24%	21
Ag. Pest Control	16	93.75%	14
Ornamental And Turf	36	69.44%	28
Forest Pest Control	35	97.14%	32
Seed Treatment	3	100.00%	3
Aquatic Pest Control	6	100.00%	6
Aquatic Pest Control - Golf	2	100.00%	2
Agriculture - Pilots	4	100.00%	4
Core - Laws, Rules & Safety Regulations - PCA	12	83.33%	11
Insect & Mite Control	14	64.29%	12
Plant Pathogens	8	50.00%	7
Vertebrate Pest	4	50.00%	3
Weed Control	8	50.00%	7
Defoliation	8	37.50%	6
Plant Growth Regulators	3	0.00%	3
Nematode	3	66.67%	3
Ground Applicator - Custom	3	66.67%	3
Fumigation - Private	5	80.00%	5
Fumigation - Commercial	4	25.00%	4
Core - Laws, Rules & Safety Regulations - Custom Applicator	4	100.00%	4
Totals	366	84.70%	338

The following table represents the total number of certifications, licenses, permits, & registrations issued by the Licensing Section in FY2015:

Certifications, Licenses, Permits, & Registrations issued in FY2015	
Pesticide Use Related Licenses	2,210
Pesticide Companies	1,505
Pesticide Products Registered	11,846
Fertilizer Companies	436
Specialty Fertilizers Registered	3,535
Feed Companies	650

Seed Dealers	1,207
Seed Labelers	179
Dairy/Milk Industry Licenses	358
Aquaculture Licenses	57
Egg & Egg Products	125
Meat Industry Licenses	227
Native Plant Permits Issued	800
Feedlot Licenses	20
Equine Rescue	3
Equine Hauling	19
Free Sale Certificates	187
Free Sale Products Registered	1,306
WPS Trainer Certificates	170
WPS Handler Cards issued	7,566
WPS Worker Cards issued	13,694
Livestock Brand Certificates	1,754
Ag- Total Licenses Issued	47,854

The end of the calendar year is very busy in licensing. The following chart represents the total number of pesticide use related licenses issued during the 2015 fiscal year all which expire at year's end. Other licenses that expire on December 31 are aquaculture, meat, dairy and pesticides. Additionally, feed and fertilizer tonnage reports for the fourth quarter are due at year's end.

Pesticide Use Related Credential Summary FY2015	
Regulated Grower Permits (PGP)	926
Pesticide Sellers Permits (PSP)	91
Ag Aircraft Pilots (AAP)	49
Custom Applicators (CA)	34
Equipment Tags	159*
Pest Control Advisors (PCA)	155
Private Applicators (PUP)	438
Commercial Applicators (PUC)	326
Golf Course Applicators (PUG)	286
Pesticide Responsible Individual (PRI)	1

Fertilizer Tonnage FY2015 (in Tons)			
Bag	Bulk	Liquid	Total
47,896	96,397	244,663	388,956
Feed Tonnage FY2015 (in Tons)			
1,590,618			

Office of Pest Management

License or Registration	Received/ Processed	Newly Issued	Overall Issued	Did not follow through by end of FY2015	No. of Licenses end of FY2015
Certified Applicator (CA)	8658	1098	8611	47	6421
Qualified Applicator (QA)	1823	126	1813	10	1165
Business License (BL)	1183	134	1180	3	1193
Branch Office	82	2	2	0	82

The Office of Pest Management (OPM) has an internet based license renewal system – RenewEZ; which processed 90% of all renewals received in FY2015. All certifications and licenses expired on May 31st.

OPM Testing

To show competency in the application of pesticides, an applicant must be certified. To be certified an applicant must score at least a 75% on their respective certification exams. A new applicant must pass the Core and at least one Category-Specific exam. To broaden an existing certification, an applicator must pass the category-specific exam that they applied for. Since July of 2003, through an RFP process, the OPM's exams have been administered by Metro Institute, Inc. (Metro), an independent testing vendor, by way of a computer-based testing system. Certified Applicator and Qualified Applicator applicants submit their application to the OPM. Upon approval of the application, the OPM transfers the applicant's information and the categories the applicant is eligible to take to Metro. Metro has test centers in Phoenix, Glendale, Tucson, Flagstaff, Prescott, Kingman, and Yuma.

Fiscal Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
No. of Exams Administered	5,067	5825	8585	7732	7145	4833	4467	4111	4284	5390	4265	6011

The number of exams given through the independent testing vendor since 2004.

Compliance

Pesticide Compliance

The inspection staff conducts a number of different types of health and safety inspections at commercial and private businesses that repackage, manufacture and distribute pesticides to permitted agricultural establishments. This includes pesticide dealers and pesticide production establishments to ensure compliance with State and Federal pesticide sales, manufacturing and bulk storage regulations. Inspections dealing with the new federal bulk pesticide containment regulations which cover bulk agricultural pesticide storage and pesticide container requirements became even more detailed as the container regulations went fully into effect. These regulations are to ensure containers do not fail and in the unlikely event that a large container does fail, there is containment to ensure mass environmental

contamination does not occur. These inspectors also are responsible for the Non-Food Quality Assurance program inspections (feed, fertilizer, pesticide and seed).

Restricted Use Pesticides

Any product making a claim to control, mitigate, repel, kill etc. a pest is a considered a pesticide by Arizona and Federal law. Inspections are conducted at pesticide marketplaces to ensure that pesticides are registered with the State and the Environmental Protection Agency.

Pesticides manufactured in other countries and illegally imported into Arizona may pose health risks to people, animals, and the environment as they are not subject to the same safety standards, strict quality control, labeling or child-safe packaging measures as pesticides manufactured for use in the United States.

Inspections at pesticide dealers and on agricultural establishments ensure pesticides classified as restricted use are sold and used only by certified individuals. Through testing, we ascertain a certified applicator's understanding of label directions and their ability to manage the associated risks. The contact of inspection staff with those who sell pesticides, also ensures that agricultural use insecticides do not find their way into urban settings for residential use, which can be deadly.

Misuse is taken seriously

The Department inspection staff observes applications, mixing and loading, storage and empty container disposal of pesticides to ensure pesticides are being used safely. Complaints alleging pesticide misuse are promptly and thoroughly investigated. Once a complaint investigation is complete, a recommended disposition is prepared. No recommended disposition dealing with a third party complaint can take place without a review and approval by the Associate Director, the Director and by an attorney from the Office of the Arizona Attorney General. In cases where facts document a violation occurred and all reviewing parties agree a violation of the pesticide laws occurred, a citation can be issued. Cited parties may request a hearing with the Office of Administrative Hearings or pay a penalty established by law for their actions.

Report pesticide misuse

The Environmental Services Division (ESD) has a long-standing Pesticide Emergency Hotline at 1-800-423-8876 where potential pesticide misuse can be reported. Arizona requires that this number be part of the required worker safety training elements so workers and handlers have the knowledge to make it easier to report worker protection standard (WPS) concerns. This line is used by pesticide applicators to request an inspector to monitor an application when spraying in sensitive areas where concerns have been previously raised regarding applications. Third party pesticide misuse/drift complaints are also received from Arizona communities calling directly to the Department main telephone number, (602) 542-4373. Such calls are forwarded to ESD inspectors for further investigation.

Agricultural Worker Safety

Farms, forests, nurseries and greenhouses purchasing and applying agricultural use pesticides must comply with Arizona's Worker Protection Standard (WPS). The worker safety program and regulations are designed to protect agricultural workers and pesticide handlers from pesticide related injuries.

Within the past 2 years, golf courses were moved under the Arizona Department of Agriculture jurisdiction, adding close to 200 new agricultural establishment licensees. As such, golf courses which have nursery facilities (move a plant from one location to another) must also abide by, and are routinely inspected for compliance with, the Worker Protection Standard. This year, there was an emphasis put on compliance with this law.

If agricultural-use pesticides are applied on an agricultural establishment the establishment must adhere to the following requirements:

- Provide training to workers and handlers on safe pesticide handling
- Provide notification of pesticide applications
- Provide label required personal protective equipment and decontamination supplies
- Provide transport to a medical facility should an employee claim illness due to pesticides
- Provide a central location where emergency medical information, pesticide safety guidelines and information on pesticides applications made on the establishment can be obtained

The law prohibits an agricultural employer from retaliating against an employee for complying with or attempting to comply with agricultural safety standards.

Train-The-Trainer [TTT] Workshops

During the State fiscal year, ESD Compliance staff, along with Agricultural Consultation and Training staff (ACT), conducted six Pesticide Safety Train-The-Trainer Workshops in English and Spanish for new trainers and those with expired certificates. The full-day workshops were held in Phoenix, Yuma, Mohave Valley and Flagstaff. In addition to these workshops, ESD and ACT staff also presented seven, 4-hour refresher courses for current pesticide safety trainers in Yuma, Maricopa, Mohave Valley, Flagstaff and Chino Valley. Attendance to these workshops totaled 187 industry members.

Recertification & Training Courses

Annual Recertification & Training Courses were held across the state. Pest control advisors, certified applicators and responsible parties for pesticide sellers were able to obtain six hours of continuing education for attending the full day course. The courses were held: November 19 in Yuma, December 2 in Maricopa and December 9 in Safford. Courses covered the Worker Protection Standard, certified applicator recordkeeping, pollinator protection, among numerous other topics important for the safe use of pesticides.

Groundwater Protection

Close cooperation between the Arizona Department of Agriculture and the Arizona Department of Environmental Quality continued. Sixteen (16) monitoring wells were sampled twice in the past year, in September of 2014 and June of 2015. Over 1600 analyses were performed on samples for the active ingredients on the State's groundwater protection list and pesticides of interest list for the EPA. The State Agriculture Laboratory does the analysis. The funding for the analysis has been provided by the US EPA through the agency's cooperative agreement. Working as a team with ADEQ all new agricultural use products are being reviewed before registration to ensure the State's groundwater resources are protected.

Community / Industry Outreach Activities

ESD Compliance inspection staff participated in community / industry outreach activities in Yuma, San Luis and Willcox, Arizona.

- Southwest Ag Summit – Yuma, AZ
- Willcox Ag Days – Willcox, AZ
- Golf Course Ag Outreach – Scottsdale, AZ
- Dia Del Campesino Health and Information Fair – San Luis, AZ

Training /Conference Attendance

ESD Compliance staff attended training/conferences as follows:

- 2015 Desert Ag Conference – Chandler, AZ
- Groundwater Sampling Workshop – Tucson, AZ
- US EPA Region 9 Basic Inspector Training – San Francisco, CA
- 2014 Tribal Pesticide Inspector Training – Maricopa, AZ
- Operation S.A.F.E.-Application Pattern Analysis Clinic – Somerton, AZ

Pesticide USE & Worker Safety Violations Observed

Pesticide Control (USE) Violations	Number of Violations
Label Violation	2
Drift / Overspray	2
Expired License	2
Illegal Sales	2
Container Disposal / Storage	1
Operating Without A Valid License	2
Personal Safety Equipment Not Provided	1
Failure to Verify Training	1
Decontamination Site / Supplies Not Provided	1
Worker Safety Violations	Number of Violations
Failure to Train	10
Failure to Verify Training	6
Central Posting – Missing / Incomplete - Inaccessible	4
Application List Not Provided / Posted / Incomplete	3
Medical Emergency Information Not Posted / Missing / Incomplete	3
Safety Poster Not Posted / Illegible / Inaccessible	3
Label Violation – Storage / Disposal / Transport / General Misuse	1
Container Disposal / Storage	1

Non-Food Quality Assurance

Inspection staff collect samples of animal feed, fertilizer, pesticide and seed products in the marketplace and at manufacturers to protect consumers by ensuring products meet label guarantees.

Marketplace inspections can be conducted at potentially any facility who sells or distributes these products. Inspection staff check product labels to ensure proper registration and proper company licensing in Arizona.

A "Cease and Desist" order and "Warning Letter" are issued if a product does not pass laboratory analysis or is found unlicensed or unregistered. They can also be issued for other label related concerns.

Marketplace Inspections and Sampling

<i>Sample Analysis for 2013 / 2014 SFY</i>		
Sample Type	Collected	Analyzed
Feed	135	265
Fertilizer	145	217
Water	32	192
Pesticide Formulation	145	145
Pesticide Residue	83	115
Seed	121	512

Samples can have numerous analyses.

Non-Food Quality Enforcement Actions

Definitions:

Warning/Notice of Violation (NOV) - Warns a manufacturer or distributor of violations related to Feed, Fertilizer, Pesticide and Seed products offered for sale or distribution in Arizona. Multiple warnings may result in products being removed from sale or distribution, as well as injunctions or seizure of violative products.

Cease and Desist (C&D) - A Cease and Desist is issued when a company fails to come into compliance and requires that the product is removed from sale and distribution in Arizona. C&D Orders remove substandard products from the marketplace for consumer protection

FERTILIZER	Number
<i>TOTAL NUMBER OF CASES OPENED</i>	46
Routine Inspections	46
Follow-Up 3rd Party	0
<i>NUMBER OF FERTILIZER PENALTIES ISSUED</i>	4
Total amount of penalties issued	2,229
<i>CEASE & DESIST ORDERS ISSUED</i>	46

Unregistered Specialty Fertilizer	18
Quality Assurance Analysis Failures	9
Unlicensed Commercial Fertilizer Company	21
<i>WARNINGS ISSUED</i>	46
Unregistered Specialty Fertilizer	18
Quality Assurance Analysis Failures	9
Unlicensed Commercial Fertilizer Company	21

COMMERCIAL FEED	Number
<i>TOTAL NUMBER OF CASES OPENED</i>	69
Routine Inspections	67
<i>CEASE & DESIST ORDERS ISSUED</i>	67
Unlicensed Commercial Feed Company	56
Quality Assurance Analysis Failures	11
Misbranding – not labeled as required	0
<i>WARNINGS ISSUED</i>	67
Unlicensed Commercial Feed Company	56
Quality Assurance Analysis Failures	11
Misbranding – not labeled as required	0

SEED	Number
<i>TOTAL NUMBER OF CASES OPENED</i>	15
Routine Inspections 3	14
Follow-Up 3rd Party	1
<i>CEASE & DESIST ORDERS ISSUED</i>	15
Expired Test Date	5
Unlicensed Seed Labeler	4
Unlicensed Seed Dealer	2
Failed Analysis	2
Label Violation	2
<i>WARNINGS ISSUED</i>	15
Expired Test Date	5
Unlicensed Seed Dealer	4
Unlicensed Seed Labeler	2
Failed Analysis	2
Label Violation	2

PESTICIDE	Number
<i>TOTAL NUMBER OF CASES OPENED</i>	34
Routine Inspections	28
Follow-up Third-party Complaints	6
Division Generated	0
Form 1080 Review	0

<i>CEASE & DESIST ORDERS ISSUED</i>	32
State Unregistered Pesticides	5
Misbranding – False Misleading Labeling	1
<i>WARNINGS ISSUED</i>	8
State Unregistered Pesticides	32
Misbranding	1
Failed Analysis	5

Total Non-Food Quality Enforcement Actions – Fertilizer, Commercial Feed, Seed and Pesticide:

Cease & Desist Orders Issued: **160**

Warnings / Notice of Violations Issued: **160**

Bovine Spongiform Encephalopathy Inspections (Mad Cow Disease)

The Compliance Section of the Environmental Services Division, working under a cooperative agreement with the Food and Drug Administration (FDA), conducted 35 inspections of feed manufacturers, dairies, feed yards, trucking companies and dealers. Bovine Spongiform Encephalopathy (BSE) Inspections are conducted to access compliance with federal regulations regarding animal feed ingredients mixed into feed for ruminant animals. This is to ensure the health and safety for both ruminants and human consumption.

Office of Pest Management (Compliance)

INSPECTIONS

Pesticide Use Inspections (1054 performed)

One of the duties of OPM Compliance is to perform Pesticide Use Inspections (aka Use Inspections). These inspections involve monitoring an applicator applying, storing or disposing of a product. The OPM believes that monitoring compliance of pesticides may actually reduce the number of pesticide misuses—thus protecting the public. The number of Use Inspections performed for FY 2015 amounted to **1054**.

The top five categories of inspections were as follows:

1	General Pest / Public Health	577
2	Wood Destroying	273
3	Turf and Ornamental	99
4	Right of Way / Weeds	61
5	Fumigation	10
6	All other categories	34

Non Use Inspections (962 performed)

Non-use Inspections are inspections that do not involve the actual “monitoring of pesticides”. They are Inspections of pesticide treatment records, vehicle inspections (ensuring labels, safe working equipment and personal protective equipment are onboard), office records (e.g. dates employees licensed, etc) as well as visits/inspections at schools, childcare and health care facilities explaining the purpose of the OPM and the requirements to be licensed. **OPM compliance staff conducted 962 non-use inspections.**

The top five categories of inspections were as follows:

Office Inspections	562
Certified Applicator Treatment Records	194
Vehicle Inspections	162
Child Care Visits	35
School Visits	6
Wood Destroying Insect Inspections	2
Health Care Visits	1

Consumer Protection Monitors (162 performed)

Inspectors utilize Pretreat Tag Monitors, also known as “Consumer Protection Monitors” (or CPMs), to determine if consumers received a termite pretreatment that complies with State and Federal requirements. This monitoring program does not disrupt the work schedule of a business, qualifying party or applicator, as it does not involve interaction with them, unless a violation is found. Rather, the inspector, visits newly constructed areas, views the pretreatment tag the applicator is required to attach to the site, after he performs a pretreatment. Then, the inspector measures the site, calculates the amount of termiticide that should be applied and compares his findings with the information the

applicator documents on the tag. The inspector utilizes the pretreat tag to not only verify the proper quantity, strength and dosage of termiticide to a site, but also to determine if the business performing the treatment is reporting the treatments to the Office as required by Law. **In FY 2015, OPM inspectors performed 204 Consumer Protection Monitors.**

Investigations (125 inquiry investigations performed)

Inquiries are “threshold investigations”. Basically, it’s a preliminary investigation, which takes no more than 30 to 60 calendar days for Compliance staff to determine if there is evidence of a violation or not. Inquiries come from consumers, licensees, agency staff or referrals from the USEPA or other State or local government agencies. If violations are found, the inquiries then become complaints. **The Office conducted 125 inquiry investigations in FY 2015.** The inquiry categories were as follows:

Category	Inquiries Open
3 rd Occurrence	1
Corrective Work Order	1
Final Grade	1
Insurance	6
Misuse	24
90 Day	1
QSD	3
Records	13
TARF	5
Unlicensed Applicator	4
Unlicensed Activity	72
WDIIR	6

Complaints (58 adjudicated cases; 62 actually closed)*

The OPM issues a citation only after the Compliance Director, Attorney and the Director have conducted a review of the investigative report and have determined that a violation meriting disciplinary action has occurred. To maintain consistency, the Compliance Director utilizes an Enforcement Response (ERP) guidelines, which take into account case specific factors, and provides guidance in the determination of the appropriate disciplinary action. Penalties may include, administrative warnings, civil penalties of up to \$1000 or license suspension/revocation for the most egregious violations. **In FY 2015 the OPM adjudicated 58 complaints. And, 62 of them were closed.** The categories for the complaints are as follows:

Category	Complaints Closed
3 rd Occurrence	0
Corrective Work Order	0
Final Grade	1
Insurance	12
Misuse	4
90 Day	0

QSD	4
Records	2
TARF	1
Unlicensed Applicator	4
Unlicensed	32
WDIIR	2

Consumers can visit <http://www.sb.state.az.us/ComplaintSearch.php> and view the complaint history of any respondent whom the OPM has opened and adjudicated a complaint.

<u>Type of Disciplinary Action</u>	<u>Number</u>
Administrative Warnings	51
Civil Penalties	\$18,050.00
Number of cases that involved Civil Penalties	33
License Suspensions	0
License Revocations	1
Dismissals	8
Cease and Desist Orders	11

*Adjudicated means all of the terms have been complied with. If a company was issued a penalty, the penalty was fully paid; if an applicator was required to obtain additional continuing education or some other term, it has been completed.

Continuing Education Applications (552 approved)

Individuals holding an applicator certification and those holding a certified qualified applicator license are required to obtain 6-hours of CE and 12 hours of CE respectively, per year. While commercial CE providers offer training on new pesticide technologies, equipment, application techniques, and business practices, OPM staff offered training regarding Rules and Statutes (e.g. applicator and qualifying party responsibilities, proper record keeping (essentially, how to stay out of trouble)). **In FY2015 compliance staff reviewed and approved 552 CE applications for OPM licensees.**

OPM compliance provided CE classes in Phoenix, Tucson, Yuma and Prescott to 314 applicators.

<u>Location</u>	<u>Number of Attendees</u>
Phoenix	179
Prescott	33
Tucson	64
Yuna	38

Continuing Education provided in in March 2015

Initial Licensing Training (25 attendees)

Initial Licensing Training (ILT) helps pre-testers better understand the aspects of pesticide, the environment and pesticide labels. OPM Compliance offered ILT courses on 4 occasions to a total of 25 attendees.

Industry Outreach (1017 licensees)

In FY2015 compliance staff (which included Acting Director Jack Peterson) spoke to industry members or participating in CE classes, addressing the new Laws and Rules. **Staff provided Laws and Rules education to a total of 1017 license holders.**

School and Childcare Visits (41 visits)

State law requires that pesticide applications in schools and child care facilities be performed only by **licensed** persons and only after the licensee provides the school or child care facility with a minimum of 72-hours advance notification (pursuant to ARS 32-2307). **This fiscal year, inspectors visited 41 school and child care facilities** to confirm that pesticides were applied by appropriately licensed persons, and that employees, students, and parents, were provided the proper information and warnings of impending pesticide treatments.

Plant Services Division (PSD)

The mission of the Plant Services Division is to safeguard agriculture, food and the environment from the risks associated with the entry, establishment and spread of plant pests, diseases and noxious weeds thereby promoting agricultural sustainability, market access and competitiveness.

Pest Exclusion and Management

Increased Threat of Pests

Increased execution of various trade agreements has resulted in a higher incidence of trade into and out of the United States and, subsequently, Arizona. Many pests common to foreign countries present a significant threat to Arizona's agricultural industry, public well-being and associated quality of life. As more commerce enters Arizona and significant weather events continue, the risk of introducing plant pests or diseases from other states or foreign countries increases.

One serious pest threat presently pressuring Arizona is the most devastating disease known to affect citrus worldwide, citrus greening, or Huanglongbing (HLB). The disease affects all species of the citrus family, and once a tree is infected, there is no known cure. Within a few years the fruit becomes bitter and unusable, and the tree will eventually die. The disease has been found throughout Florida and portions of Texas, Louisiana, South Carolina, and Mexico. The disease has also been recently found in areas of California which has become a major concern with the considerable amount of host material that is imported into the state. The presence of the disease has had a significant impact to the economy and employment in affected production areas. Although the disease has not been detected in the state, in 2009 the vector that transmits the disease (the Asian citrus psyllid) was discovered in Yuma County, near the border with Mexico. Since then, the vector has advanced to other areas of the state putting commercial citrus production and the citrus nursery stock markets at risk.

Even with multiple safeguarding measures in place, the risk of introducing the disease to the State is significant. With the trade of commerce that can harbor infected material, the increase of detections of the disease and vector in neighboring states and countries and the illegal movement of infected plants from one area to another are factors in making it increasingly difficult to exclude the disease from the State. Maintaining a viable front to limit the introduction of the disease and quickly responding to a new detection is vital to protect Arizona's citrus from this potentially devastating disease.

In addition, the potential for introduction of a devastating plant pest or disease of pecans and other tree nuts is high due to pest pressures in New Mexico and Mexico. Arizona has seen significant growth in the production of tree nuts and an increase in the amount of tree nuts shipped into the State for processing. Associated with this expansion and movement, is the prominent increase in the potential for introduction of a dangerous plant pest or disease through the transport of commodities back and forth across interstate and international borders.

Specifically, one of the biggest pest threats comes from the pecan weevil. The pecan weevil is the most devastating pest of pecans in the United States. The pecan weevil is found from New York to Iowa, south to Oklahoma, and across the southeastern states from Florida to Texas. Occasionally the weevil is found in New Mexico, but in that area the pest is under eradication, thereby limiting its movement further west. Other pests of concern include pecan nut case bearer, hickory shuck worm and pecan phylloxera.

The Division, in partnership with stakeholders, is able to validate that clean product is exported from the State and safeguard our nut industry by vigorously inspecting facilities that receive and process tree nuts from local sources and from other states and countries. A pheromone trapping system is also utilized to identify potential threats in commercial nut production groves that act as a first line of defense for early response, and provides the best opportunity to identify an emerging pest issue and mitigate the problem in a timely manner.

Arizona's agricultural landscape is continually changing to meet global demands and is progressive in opening new markets for the state. This changing climate presents new challenges for the Division in safeguarding agriculture and maintaining market access for our customers. This is accomplished with open communication with our stakeholders and utilizing resources efficiently and effectively.

Dangers

Introduction of non-native plant pests can have devastating effects on the yield of agricultural and horticultural commodities, and can increase industry production costs through pesticide applications for eradication or control of destructive pests. Plant pests reduce the quality and marketability of products and threaten the demand for Arizona products.

Metropolitan Phoenix is among the nation's largest cities and growing. This unprecedented growth has fueled significant increases in the importation and distribution of plants, many of which originate in parts of the country already infested with devastating and costly exotic pests such as the Light Brown Apple Moth that can have a serious effect on a number of plant species or the Emerald Ash Borer that is a devastating wood borer.

Pest Exclusion Safety Nets

The Pest Exclusion and Management Program has moved to incorporate new technologies, advanced inspector training and updated quarantine requirements. Intensive pest-trapping methods are used to meet the challenges of rapid urban development, increased trade and expanded export opportunities for Arizona's agricultural industry.

Free-From Status

Arizona continues to enjoy freedom from numerous exotic pests that have cost infested states millions of dollars in attempted control or eradication. Through efforts to exclude, detect and mitigate exotic species establishment, the Division safeguards agricultural production, the public and market access for our agricultural commodities produced here.

Top Ten Plant Pests Impacting Arizona's Agriculture, Public and Economy

- **Citrus Greening** — poses a serious threat to Arizona's citrus trees now that the vector of the disease, the Asian citrus psyllid, has made its way into Arizona. Trees infected with citrus greening, also known as Huanglongbing, may produce misshapen, unmarketable, bitter fruit. Other than tree removal, there is no known cure for the disease. In areas of the world affected by citrus greening the average productive lifespan of citrus trees has dropped from 50 or more years to 15 or less. Trees in orchards usually die 3-5 years after becoming infected and require removal and replanting. An infected tree produces fruit that is unsuitable for sale as fresh fruit or for juice and the tree eventually dies.



HLB infected and healthy citrus leaves -
University of Florida



Citrus greening – H.D. Catling

Regulatory restrictions are in place for Florida, Georgia, Puerto Rico and portions of California, Texas, Louisiana and South Carolina for citrus greening; for the Asian citrus psyllid, Alabama, Texas, Mississippi, Florida, Hawaii, Guam, and portions of Louisiana, California, South Carolina and Arizona.

- **Pecan Weevil** – attacks the pecan nut, causing serious crop loss. The larvae (grubs) develop inside nuts and destroy the entire kernel by their feeding process. The nearest infestation of pecan weevil is in New Mexico. Arizona Administrative Code R3-4-231 restricts the entry of pecans, other nuts, and firewood to prevent movement of pecan weevil into the state.



White larvae (grubs) destroying the inside
of a pecan -
H C Ellis, University of Georgia



Mature weevil -
Clemson University - USDA Cooperative Extension

- **Red Palm Weevil** – is a major plant pest of palm trees and was discovered for the first time in the U.S. in 2011 at a residence in California. The red palm weevil can have severe effects to production date palms and other ornamental and native palms found in Arizona.



Adult Red Palm Weevil -
John Kabashima, UC Cooperative
Extension



White larvae (grubs) with cocoon made from palm fibers -
Mike Lewis, Center for Invasive Species
Research

- **Japanese beetle** — defoliates ornamental plants and destroys turf roots resulting in decline or death; threatens the quality of golf courses, parks and lawns, and export potential of Arizona's green industry. Three of Arizona's neighboring states (Colorado, Utah and New Mexico) are battling infestations of Japanese beetle. National harmonized regulatory requirements aid in preventing the interstate spread of this pest on nursery stock and



Japanese beetle adult -
David Cappaert, Michigan
State University



Adults feeding on a grapevine leaf
- USDA



Japanese beetle grubs destroy turf by feeding on underground roots – M.G. Klein. USDA-ARS

other conveyances. Federal regulations safeguard the movement of aircraft departing from infested areas.

- **Gypsy Moth** — is one of the most destructive defoliators of hard and softwood trees. Gypsy moth caterpillars feed on the leaves of more than 500 species of trees and shrubs. Larvae damage trees by eating the foliage, which weakens and eventually kills them, affecting the aesthetic value of forested areas and urban landscapes.



Gypsy Moth Larvae - USDA Forest Service



Gypsy moth larvae have eaten most of the foliage from this tree
- Haruta Ovidiu, University of Oradea

- **Fruit Flies** – (Mediterranean, Mexican, Oriental and Caribbean) — are devastating pests of citrus, dates and other types of fruit that impact quality and yield. Presence in Arizona would limit export potential of citrus and date commodities. Federal regulations restrict the movement of host material from areas under quarantine to prevent the spread of infestations. Photos show fruit fly larvae in damaged fruit.



Fruit Fly Larvae – FDACS-DPI



Adult Mexican Fruit Fly – Jack Dykinga, USDA-ARS



Fruit Fly Larvae – FDACS-DPI

- **Red Imported Fire Ant** – An aggressive competitor with native ant species, its aggressive behavior and its ability to both sting and bite threatens public well-being, quality of life and agricultural production, especially livestock. Presence in Arizona would limit the export potential of the state's green industry. In appearance, the native Southern fire ant closely resembles the Red imported fire ant. A Federal quarantine restricts movement of regulated commodities from infested areas.



Imported Fire Ant – ADA-PSD

- **Giant African Snail** – Considered one of the most damaging snails in the world. A prolific forager, this species of snail can have devastating effects on a number of agricultural crops and ornamental plants. Its slime can also be harmful to human health if ingested from contaminated garden crops.



Giant African Snail – FDACS/DPI



Giant African Snail – USDA-PPQ

- **Khapra Beetle** – (KHB) is considered one of the world’s worst pests of stored products. KHB thrives in warm, dry climates making it a significant pest risk for Arizona. Larvae are the most damaging stage; adult KHB do not feed. KHB can damage 70% of stored grain, resulting in significant reduction of grain weight, grade and quality. In addition to grain damage, KHB larvae have barbed hairs that can irritate the skin and respiratory tract and, if ingested in large numbers, can result in serious gastrointestinal irritation. Adult KHB are flightless, and therefore, human transport of infested commodities is the primary method of long distance dispersal.



Khapra Beetle - Ministry of Agriculture and Regional Development, Bugwood.org



Khapra Beetle - Ministry of Agriculture and Regional Development, Bugwood.org

- Old World Bollworm – (OWB)** is significant threat to agriculture since it has wide range of hosts that include a number of Arizona's high value crops, including cotton, corn, small grains, peppers and tomatoes. Additionally this pest bears a close resemblance to other cutworms, including the corn earworm, which is a common pest in the state. This close resemblance makes early detection even more difficult and could delay early efforts to combat an introduction. The OWB has been detected Puerto Rico and most recently a single adult was captured in Florida. According to the Southeast Farm Press, global damage from this pest has been reported at more than \$2 billion annually.



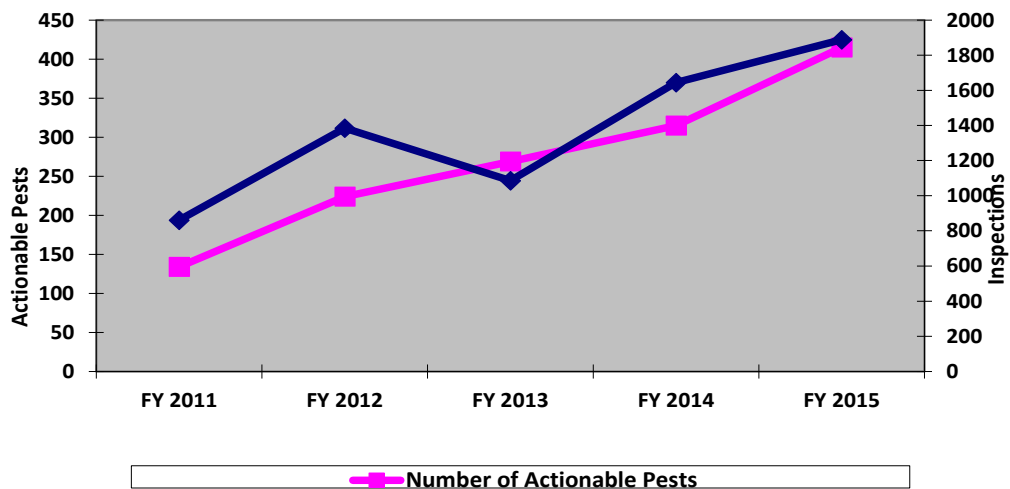
Old World Bollworm -
 Julieta Brambila,
 USDA APHIS PPQ,
 Bugwood.org



Old World Bollworm
Larvae –
 Paolo Mazzei,
 Bugwood.org

Inspections

Inspection staff assigned to three operational locations (Phoenix, Tucson, Yuma) function as the primary safety net against pests of concern. During the period FY08 to present, the reduced staffing, including elimination of agricultural inspections at the state border ports of entry, has resulted in a 310% increase from FY11 to FY15 in the number of actionable pest detections made during inspection (chart below) that required mitigation through treatment, destruction of the commodity, or re-shipment back to origin, causing significant, aggregate mitigation and opportunity costs to stakeholders.



An Overview

In FY 2015, inspection staff intercepted 6,990 pests within the state's interior through various inspections with 283 of the pests intercepted identified as serious pests of concern; 1,603 federal phytosanitary certificates were issued for the international export of vegetable, agricultural, and ornamental seed, produce, nursery stock, wood products, and various other agricultural commodities. Pre-clearance of plants for pests, most notably citrus stock, before distribution within the state is a major inspection task.



Digital imaging system -
ADA-PSD

Biological Identification Group

Through the Division's Biological Identification Group, identification of potential dangerous plant pests can be made accurately and quickly. This affords inspection staff the ability to respond in a more timely fashion to pest interceptions reducing the cost of potential eradications and minimizing the impacts on commerce. The staff also plays a key role in the development of Pest Risk Assessments and Economic Impact Statements. This allows the Division to make accurate, real-time decisions on pest mitigations and evaluating the threats to state's agriculture stakeholders.

Early Pest Detection

The early detection of potential pests and delimiting surveys of pest infestations through trapping and surveillance programs for a wide range of pests is the final safety net in the Division's pest interception effort. This is a highly important component of our agricultural safeguarding system. Realistic trap densities are one aspect of this system that may fluctuate within certain geographical area based on certain risk factors. The main risk factors are:

- Availability of suitable hosts
- Climate conducive to the pest
- Evidence of potential pest pathways within a community or local area, such as:
 - Densely populated areas
 - Frequent travel to infested areas
 - Availability and demand for exotic fruits, vegetables and other plant material
 - Gardening groups and clubs specializing in rare plant propagation
 - Mail parcels from infested areas
 - Major ports of entry (land and air) and transportation routes
 - Wholesale marketing centers and street vendors
 - Historical trapping results

All of these risk factors must be taken into consideration when determining trap densities. Arizona is a state with extreme uniqueness in climate, host distribution, and key potential pathways. As a result of this uniqueness, a distinctive risk level description and resulting rotational strategy is required to allow trappers to efficiently and effectively safeguard Arizona from exotic pests.

Statewide, an average of 6,299 traps were placed, serviced and monitored throughout FY 2015 for 16 targeted pest species. A majority of these traps are regularly serviced 2 times a month increasing their effectiveness for detecting a dangerous plant pest before a major infestation is discovered.

Aggressive Pest Detection

Foreign nations require scientific data to ensure that pests that inhabit Arizona will not harm their crops. Since the Division maintains an aggressive detection program to help protect that Federal free-from pest distinction, Arizona's agricultural producers can ship almost anywhere in the world and their products are welcomed in many foreign markets. This level of market access without the "stain" of quarantines is unique, and is the result of the Division's commitment to protect Arizona industries.

Exotic Fruit Flies

In particular, many foreign nations are concerned about the exotic fruit fly complex (Mediterranean, Mexican, Oriental, Sapote, Caribbean and other fruit flies). Exotic fruit flies, much like a wormy apple, cause citrus fruit to be cosmetically unacceptable to consumers and increase spoilage in commercial storage.



Fruit Fly adults –
FDACS-DPI

The Division's exotic fruit fly detection efforts involve monitoring an average of 1,852 traps placed statewide and currently meets or exceeds the Federal protocols.

In FY 2015, inspectors continued to use all internationally accepted lures and trapping arrays and techniques for a highly efficient detection strategy for all exotic fruit fly species of concern. Add to this an ongoing training process for fruit fly trapping personnel and a focused quality control system, and the result is that Arizona citrus, both commercial and residential, is assured of appropriate protection

from a debilitating infestation from these destructive pests.

Nut Pest Monitoring

The nut industry, including pecans, pistachios, and walnuts, is a fast growing agricultural industry within Arizona. Currently, over 21,000 acres are planted and the Division conducts early detection pest trapping (over 2,882 traps monthly during the season) on over 17,000 bearing acres.

Several devastating pests exist within the nut producing states surrounding Arizona, but Arizona still enjoys a pest free status. The Division has developed and implemented a detection strategy to monitor for the introduction of several of these pests, including the Hickory Shuck worm, the Pecan Nut Case bearer, the Pecan Weevil and the Walnut Husk Fly.



Commodity Inspection -
ADA-PSD

Inspectors place traps in both commercial and residential pecan environments in order to monitor for an introduction of these devastating pests. In addition, Arizona pecan cleaning facilities are inspected during the cleaning season each year to ensure Arizona pecans are pest free and therefore able to enter the export market unhindered.

Hand in hand with producers and industry representatives, the Division is leading this proactive endeavor to keep Arizona-produced nuts free from pests of export significance, making Arizona-produced nuts a commodity that is desired by many in this important export market.

Gypsy Moth



Gypsy Moth trap -

Gypsy moth, a devastating forest pest well established in the northeastern United States, is a pest that is threatening Arizona's forests. Leaf destruction caused by the feeding caterpillars weakens trees and can lead to tree death. Once again, due to Department commitment, no reproducing gypsy moth population has been detected in Arizona. Occasionally, a "hitchhiking" male moth has been detected in traps placed at RV parks. The division maintains an active gypsy moth trapping program including placement and servicing of traps on state and private forestlands there were 397 gypsy moth traps

placed during this fiscal year at high risk locations. High-risk locations, such as RV parks, are routinely trapped.

Citrus Greening/Asian Citrus Psyllid

Citrus in Arizona is a popular choice by many for the production of citrus fruit and nursery stock, and as an ornamental landscape in many areas of the state. Citrus is under threat from a devastating disease, citrus greening or Huanglongbing. A citrus tree, once infected, will eventually die. The Division has trained inspectors that carry out a number of pest detection methods to detect the first sign of citrus greening disease (HLB) or the pest that carries the disease, the Asian Citrus Psyllid (ACP). In FY15, the Division expanded and redirected its efforts to detect HLB since the ACP has expanded its presence in the state.

In FY15, the Division conducted 17,248 residential surveys statewide. The Division submitted 539 samples for HLB analysis with no detection of the disease. Through a partnership with the USDA, the Division has deployed on average 1,975 insect traps statewide. The state also has safeguarding methods in place for producers of citrus nursery stock through the Clean Citrus Stock Program. To date, the disease has not been detected in the state.



**Screened nursery facility -
ADA-PSD**

Khapra Beetle



Grain facility - ADA-PSD

To secure the exportability of grain and stored dry products produced in Arizona, methods are in place to detect early infestations of the devastating Khapra beetle. During FY15, there were 184 traps were placed and monitored. The Khapra beetle is one of the world's most destructive stored-product pests. It is

difficult to control once introduced into a region because it feeds on a variety of dried materials, is resistant to insecticides, and can go long periods without food. Infestations can result in up to 70 percent grain damage, making products inedible and unmarketable.

European Corn Borer

The European corn borer is a damaging pest that can jeopardize the quality and exportability of corn grown in Arizona. The products that are produced for export can be surveyed for European corn borer to meet the entry requirements of other countries and/or states. Corn products that are imported into Arizona must meet the entry requirements defined in A.A.C. R3-4-228: European Corn Borer.



European Corn Borer Larvae - Keith Weller, USDA-ARS



Japanese Beetle Adult- Stephen Ausmus, USDA-ARS

Japanese Beetle

The Japanese beetle is an aggressive feeder and reproduces at a high rate. They can destroy turf grasses, ornamental plants, and many vegetable crops common in Arizona. High risk areas are monitored for the pest and imported host product must meet entry requirements found in nationally harmonized regulatory requirements.

Palm Pests

Arizona's date industry is growing significantly with a 30% increase in planted acres in the last five years. The Red Palm Weevil and the South American Palm Weevil are major concerns to the ornamental palm and palm date production areas of the state. These weevils can have major impacts on the health of palm trees and can eventually kill a tree if not placed under control. The South American Palm Weevil can also carry a nematode that can cause Red Ring Disease that can kill palm trees as well.

Commitment to Service

The Plant Services Division (PSD) continues its efforts to improve timeliness and quality of customer service delivery and even though faced with the continued impact of budget reductions, reduced inspection staff as well as numerous other pest challenges, PSD has demonstrated its commitment to service by the following:

Export Certification

The Division administers certification programs to facilitate interstate and international movement to agricultural commodities. Due to staffing limitations and reduced operating budgets, the Division has been unable to satisfy requests from major chains (Target, WinCo and

Wal Mart, to date) for preclearance inspections necessary for commodity export from the large distribution facilities established in Arizona, impacting economic development in the State.

In addition, the Division eliminated international export inspection and certification services in previous fiscal years to stakeholders in all counties except Yuma and La Paz due to insufficient staffing. This resulted in a more than doubling of stakeholder expenses to access similar services from Federal authorities. International export certification is up 30% year-over-year to date (Federal FY14/15), and growing, on strong export demand and unfettered market access as a result, in part, of Arizona's sustained free-from status for numerous pests of concern and absence of quarantines of concern to international trading partners.

- **Domestic shipments of nursery stock**

In FY 2015, inspectors issued 1,596 single shipment certificates (an increase of 11% over FY14) for shipments of agricultural commodities to other states. Nursery stock accounted for 361 certificates.

- **Voluntary nursery certification program**

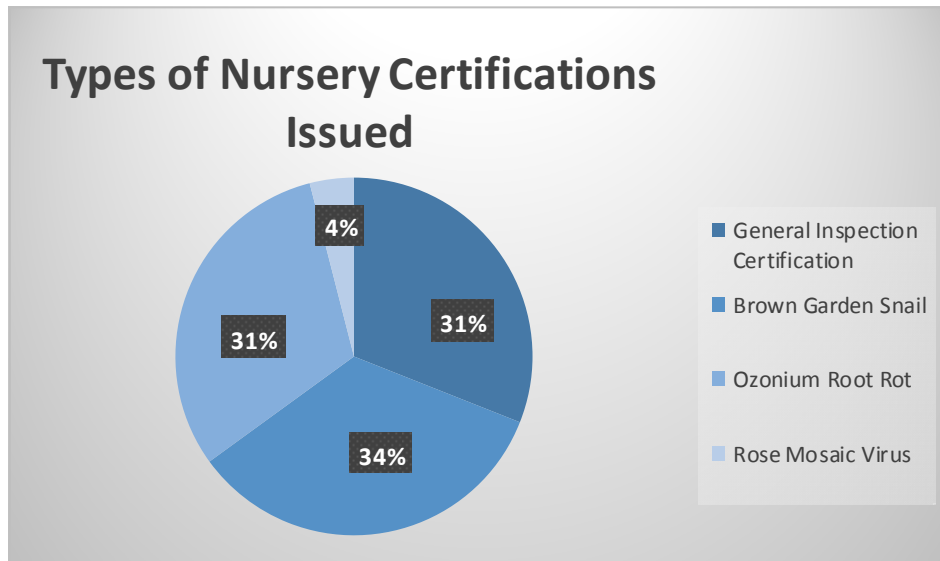


Nursery inspection - ADA-PSD

In safeguarding the market access of Arizona produced nursery stock, certification programs exist to certify a commodity to meet the requirements of other states. Arizona produced nursery stock most often is required to have a "General Nursery Stock Certification" (A.K.A. Arizona Certified) that attests to the general health and freedom of dangerous plant pests. Some states also require certification for specific pest threats (i.e. Ozonium root rot, Brown garden snail, Rose mosaic, etc.).

The Division also administers the state's Clean Citrus Stock Program, under Director's Administrative Order DAO 11-6, which allows citrus nursery stock producers to participate in a program that focuses on maintaining a pest free status from the Asian citrus psyllid. The program allows establishments inside an area under quarantine, within the state, for the Asian citrus psyllid to move their product to areas outside of the quarantine under strict safeguarding measures. Some of the key guidelines for citrus nursery stock are that material is produced in an approved screen house and follows a treatment and inspection protocol.

The Division received 290 applications during calendar year 2014 from Arizona nurseries requesting certification to comply with the entry requirements of other states, and issued 251



individual certificates following inspection of the applicants' properties.

Export Enhancement

Arizona's economy benefits greatly from the Department's strict maintenance of its aggressive pest detection program. In previous years, government quarantine officials from the People's Republic of China, Chile, Argentina, Israel and Mexico reviewed the Division's pest detection efforts to the end that more and more foreign nations have opened their market, thus allowing Arizona producer's greater financial growth options.

Noxious Weeds

"Weed" is a term used to designate a pest plant. Certain imported or introduced (non-native) invasive weeds are extremely destructive and labeled as noxious for regulatory purposes.

Some of Arizona's Weeds of Major Concern

Giant salvinia	Buffelgrass
Russian knapweed	Yellow starthistle
Leafy spurge	Sweet resinbush
Camelthorn	Diffuse knapweed
Dalmatian toadflax	Hydrilla
Onionweed	Floating water hyacinth

Noxious Weeds for Sale

Often, non-native species have no natural enemies in new environments and, if exotic species are aggressive, they may become weedy invaders in their new habitats. Division inspectors find prohibited plant species in retail seed displays, in display ponds and retail ethnic markets on occasion and the product is restricted from sale.



Morning Glory – Billy Craft

**Morning glory
vine (left) and
floating water
hyacinth are
examples of
noxious
weeds found
for sale in
Arizona**



Floating Water Hyacinth
– Ted D. Center, USDA-ARS

Additional pathways for the distribution and sale of noxious weeds are through internet sales, peer to peer auctions, plant exchanges amongst hobbyists and sale sites. These activities, and the potential movement of noxious weed species, may inadvertently cause the introduction and an infestation of a noxious weed.

State Agricultural Laboratory

The Arizona Department of Agriculture State Agricultural Laboratory (SAL) provides quality agricultural laboratory analysis, identification, certification, technical consultation and training services to various regulatory Divisions of the Department and others as provided by law. To maintain the integrity of its test results, the Laboratory operates independently of the Department's regulatory Divisions and operates under a stringent quality assurance program.

The Department laboratory exists in two separate, small laboratories. The table below illustrates where testing is conducted.

Service	1520 W. Adams	250 N. 17 th Ave.
Entomology – M	c (limited)	
Entomology – PCR	c	
Plant Pathology – M	c	
Plant Pathology - Elisa	c	c
Plant Pathology - PCR	C	
Seed – Export	c	
Seed – Regulatory	C	
Brucellosis – Milk		C
Meat – Food Safety		C
Food Safety	C (rtPCR methods)	C
Dairy Micro		C
Dairy Antibiotics		c
Dairy Pesticides	c	c
Dairy Aflatoxin	c	c
Feed	C	
Fertilizer	C	
Pesticide Formulations	C	
Pesticide Residue	c	C

Legend:

c = capability to perform testing under certain conditions with added/redirected resources

C = capacity to perform testing with current resources

Pink Boll Worm Eradication

The SAL worked in conjunction with the Arizona Cotton Research and Protection Council (ACRPC) and the United States Department of Agriculture (USDA) to develop a method of identifying native pink boll worms. This insect is a significant pest affecting the production of cotton in arid climates. In an effort to eradicate the pest, the USDA releases millions of sterile pink boll worm moths into the environment in areas where cotton is grown. The sterile insects compete with any remaining native insects during mating, effectively reducing the propagation of the species. This program has been very successful and the damage caused by the pest has been largely eliminated.

To monitor the success of the eradication, thousands of insect traps are placed and monitored in cotton production areas throughout the US and Mexico. Before releasing the pink boll worm moths, the USDA must “mark” them in order to delineate the sterile moths from any naturally occurring moths. In the past, the pink boll worms were fed a chemical dye which aided in the detection of the sterile moths. However, the longer the released moths were in the environment prior to being trapped, the lower the concentration of the dye that remained in the moths for detection. As the population of the native moths approaches zero, the difficulty in detecting a very low level of dye in the sterile moths has become an impediment to determining whether the eradication effort needs to continue.

SAL scientists developed a new method of determining if a trapped insect was a released sterile moth or a native moth. Utilizing advanced instrumentation, SAL scientists could detect small amounts of the element strontium when present in the body of the insects. USDA modified its rearing procedures to incorporate strontium into the diet of the sterile pink boll worms. Now moths obtained from the traps are tested by SAL scientists; moths containing significant amounts of strontium can be readily identified as sterile moths while those lacking strontium can be assumed to be native moths. The lab has processed nearly 2,000 samples for the ACRPC this year.

Homeland Security

The SAL continues to maintain its capabilities to provide assistance to the State and the Nation in the event of a homeland security emergency. Federal, State and local governments continue to work together to produce a network of laboratories capable of responding to emergencies. SAL has worked hard during the past year to secure its place within the laboratory emergency response infrastructure.

Western Plant Diagnostic Network (WPDN) – Part of the National Plant Diagnostic Network (NPDN), this network consists of laboratories performing plant pathogen, weed and insect pest identifications. Within Arizona, as an offshoot of this network all identified laboratories with plant pest detection capabilities have formed the Arizona Pest Diagnostic Network. The purpose of these groups is to form and maintain a network of diagnostic labs that will communicate information, mainly pest diagnoses and form a communication network to rapidly exchange information in the event of a significant exotic pest find.

Food Emergency Response Network (FERN) – FERN is a network of State and Federal laboratories that are committed to analyzing food samples in the event of a biological, chemical or radiological outbreak or terrorist attack in this country. SAL is a member of the FERN for both chemical and microbiological testing.

Quality Assurance Program

Quality assurance is an integral part of the Lab's analytical operations. It is the scrupulous attention to quality assurance standards that enables each of the laboratory's customers to act upon test results with utmost confidence.

Quality manuals define the laboratory policies, systems, programs, procedures and instructions to assure the quality of the test results. Standard operating procedures referenced in the quality manual detail laboratory processes, test methods, as well proper use and maintenance of equipment. These procedures ensure uniformity of work and the accuracy and reproducibility of test results.

The laboratory continues to monitor the increasing demand for ISO (International Organization for Standardization) certification for laboratories providing regulatory testing. The evolving standard for laboratories similar to SAL is ISO 17025. As federal agencies complete the implementation of ISO certification within their own labs, it is anticipated that the federal agencies will require state laboratories to become similarly certified. Such certification is expensive and time intensive; therefore, SAL will continue to monitor the situation and remain a part of the conversations with regard to such certification requirements.

Laboratory Audits

The dairy microbiology lab undergoes on-site laboratory audits that are conducted every three years by the U.S. Food and Drug Administration (FDA) Laboratory Evaluation Officers. Last year, in accordance with procedures related to the relocation of the laboratory, SAL underwent a special on-site audit; SAL passed the audit with flying colors. Such audits, combined with analyst participation in an annual proficiency testing program ensure the quality of the analyses conducted by the dairy microbiology laboratory.

This year marking the first laboratory audit by the United States Department of Agriculture (USDA) of the laboratory's meat pathogen testing program. This year's audit is the next step in forcing all state laboratories to become accredited to the ISO 17025 standard.

Reference Standards and Reference Materials

Certified reference material and internal quality control using secondary reference materials are used regularly to ensure the accuracy of test results. The Arizona Department of Agriculture Collection of Arthropods houses one of the largest and most comprehensive ant collections in Arizona. It is part of an insect collection made up of over 20,000 individual specimens, representing more than 250 families of insects. This important reference collection is used by staff in identifying samples of beneficial and harmful insects, which are introduced or established in the state.

Proficiency Test Programs (PTPs)

Analytical performance is validated by participation in several proficiency test programs (PTP). PTPs provide unknown samples for analysis by the SAL and provide feedback as to how well the lab did in detecting and/or enumerating test results. Examples include: feed sample PTP by the American Association of Feed Control Officials; fertilizer sample PTP by McGruder's Fertilizer Check Sample Data Program; PTP for meat analyses by the USDA; dairy sample PTP by the Laboratory Proficiency and Evaluation Team of the Food and Drug Administration; seed sample PTP by the Association of Official Seed Analysts; pesticide product PTP by the American Association of Pesticide Control Officials; pesticide residue PTP by the Environmental Protection Agency and mycotoxin sample PTP by the American Oil Chemists Society. This year the laboratory began participating in a new PTP for pathogenic organisms in meat products. This was begun in response to increased QA requirements from the USDA for its cooperative programs with the states.

Animal Disease Detection

The laboratory collected 288,110 blood samples and tested raw milk for the bacteria responsible for causing brucellosis, a severe reproductive disease in cattle and other animals. In humans the disease is known as undulant fever. Brucellosis may be transmitted from animals to humans through non-pasteurized milk. Since the 1940s, the USDA has sought to eradicate brucellosis from the U.S., resulting in the current Cooperative State Federal Brucellosis Eradication Program. States are designated brucellosis free when none of their cattle or bison is found to be infected for 12 consecutive months under an active surveillance program. Arizona has been brucellosis-free since 1987. The last area in the U.S. known to have an active presence of brucellosis is in and around Yellowstone National Park. Monitoring is still conducted in Arizona due to the presence of a very large slaughter facility in Tolleson where some of the cattle processed originate from the Yellowstone area.

Food Safety

The laboratory participates in the Department's Food Safety and Quality Assurance Program by testing agricultural commodities for food-borne pathogens in the lab. Raw meat, ready-to-eat products, and animal carcass swab samples are tested in support of the State's Meat and Poultry Inspection Program which is a cooperative program of the U. S. Department of Agriculture Food Safety and Inspection Service program.



The U.S. Food and Drug Administration (FDA) certifies the dairy microbiology lab and individual analysts to perform testing on dairy products, dairy product containers, and environmental dairy water samples to allow export of Arizona's milk and milk products to other states. Tests conducted at SAL include bacteriological analyses, enzyme activity for proper pasteurization of dairy products, antibiotic residues and other indicators of milk safety and quality.

Forensic Testing

The SAL scientists test samples collected during investigations of off-target application of agricultural chemicals, incorrect application of pesticides to homes for the prevention of termite infestations or insect control, illegal discharge of pesticides into the environment, or failure to take necessary actions to protect industry workers. These regulatory samples are collected by investigators and delivered to the laboratory utilizing stringent chain of custody procedures. Sample types received include water, soil, produce, foliage, animal tissues, air, clothing and surface swabs. Complicating the analytical testing process are the over 11,000 pesticide products registered for use in Arizona, any one of which could need to be detected as part of an investigation. Analysis of these forensic samples requires advanced scientific tools and experience.

Consumer Protection

The expertise of the Lab's personnel with the chemistry of pesticides is further used to protect Arizona's consumers and industry through the provision of analysis of home-use, commercial and agricultural pesticide products. The Department collects samples each year from the consumer and industrial market place. Chemists then perform analyses to determine whether the content and quality of the active ingredients are correctly displayed on the product label. This regulation not only protects the end-user from potential financial losses, but it also plays a key role in protecting pesticide applicators and farm workers against harmful exposure.

The laboratory also analyzes commercial feed and fertilizer products to determine whether the amount of ingredients guaranteed on the label are accurate. This ensures that consumers receive agricultural products that meet the label guaranteed quality. For example, a fertilizer may have a grade guarantee of 10-20-5 which indicated the product must contain 10% nitrogen, 20% phosphorous and 5% potassium and the lab would run tests for all three ingredients. Similarly, a feed product may be guaranteed for protein, calcium, phosphorous or other nutrients requiring multiple testing.

SAL analysts conduct testing of commercially available seed products for purity, germination rate, and weed seed content to benefit Arizona's farmers, landscapers, homeowners, golf courses and seed export companies. Analyses were completed on seed samples to provide assurance that the seed label matches its guaranteed performance when planted and does not contain excess harmful weeds. SAL's seed analysts are certified by the Association of Official Seed Analysts.